GREIFSWALD
MIRE
CENTRE

ANNUAL REPORT 2022

Cover photo (S. Furtak): Hands-on peatland conservation: Peat mosses from Lower Saxony's paludiculture adorned the Chilean Pavilion at the 2022 Venice Biennale, which highlighted the importance of peatlands for humanity, June 2022.

Introduction

The Greifswald Mire Centre (GMC) is a partnership between the University of Greifswald, the Michael Succow Foundation and DUENE e.V. The GMC was founded at the beginning of 2015 through a cooperation agreement between the three partners. This annual report summarises the development of the Greifswald Mire Centre in its eighth year of existence, presents significant progress on the GMC's key topics and outlines developments at the GMC. The activities of the GMC are divided into:

1. Communication: Increasing the visibility of peatlands and their importance
2. Consulting & Participation: Peatland protection around the world
3. Implementation: Rewetting of own and project areas
4. Research: Creating knowledge
5. Networking: Strengthening cooperation, expanding networks

You can find an overview of key events at the GMC here.

In the year it was founded, around 50 people were working on peatland-related projects with at least one partner in the GMC; seven years later, this figure had risen to around 80 (Fig. 1).

The activities at the Greifswald Mire Centre are largely financed by third-party funds and donations (Tab. 1). Thanks to higher third-party funding and a continued high level of donations, almost 5 million EUR was raised in 2022.

Table. 1. Third-party funds, donations and prize money raised at the Greifswald Mire Centre since 2016 (in euros)

	2016	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**
Third-party funds	1.490.000	4.508.000	3.719.000	5.776.000	1.405.000	3.891.994	4.646.396
Donations and prize money	79.900	79.685	100.000	2.130	9.100	636.000	276.600
Total	**1.569.900**	**4.587.685**	**3.819.000**	**5.778.130**	**1.414.100**	**4.527.994**	**4.918.196**

1. Communication

Lots of attention for peatlands.

The fact that peatlands are attracting more and more attention is shown, for example, by the almost threefold increase in press reports involving the GMC compared to 2020 (Fig. 1). The appearance in the popular children's programme 'Sendung mit der Maus') and the 2.5 hour interview with Franziska Tanneberger on 'Jung und Naiv', which currently has over 160,000 views, are particularly noteworthy.

Five volumes with very different topics appeared in the GMC publication series in 2022. In the very comprehensive volume 04/2022, Abel & Kallweit portray 95 holarctic plant species that are promising for sustainable wet land use on peatlands in 440 pages in English based on the GMC Database of Potential Paludiculture Plants (DPPP). Wichmann et al. derive funding packages for the implementation of peatland climate protection/paludiculture projects (Volume 01/2022) and Nordt et al. shed light on the suitability of sites, planning and approvals for conversion to paludiculture (Volume 05/2022). Elshehawi et al. show how peatlands can be integrated into the National Climate Goals (NDCs) using the example of mangroves in the Caribbean (Volume 03/2022). De Klerk takes up a historical aspect of peatlands, summarising and interpreting texts and images of reedbeds in ancient cultures (Volume 02/2022).

The GMC's own website www.moorwissen.de was updated and its appearance modernised. Current information and publications were also made available on the website www.greifswaldmoor.de. On social media, the sharing of information on mastodon, facebook and Instagram was launched in addition to Twitter. The number of subscribers to the GMC Twitter account @greifswaldmoor continued to rise steadily, increasing by 30 % from 2021 to 2022 to around 2,100 (Fig. 1).

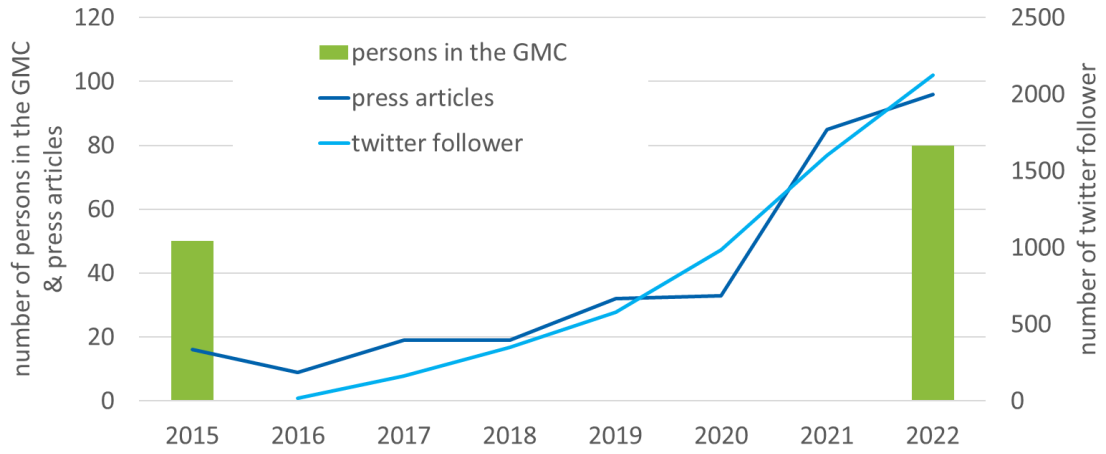


Fig. 1. Development of the number of people at the GMC (green bars), press reports with GMC participation (dark blue line) and followers of the GMC Twitter account (light blue line) since the beginning.

GMC as a magnet for exchange on peatland issues.

Numerous visitors came to the GMC in July and August 2022. Interest in peatlands is growing in politics, business, the public and climate research. The youngest MEP, Delara Burkhard (Progressive Alliance of Socialists & Democrats, S&D) and her colleagues MdEP Jutta Paulus and Hannah Neumann (The Greens/EFA) discussed with the GMC how peatland protection can be promoted at European level. Cem Özdemir (Federal Minister of Food and Agriculture) and Member of Bundestag Ricarda Lang (Federal Chairwoman of Bündnis 90/Die Grünen) stopped off in the Hanseatic city during their summer trips to find out about peatland research and innovative use and to discuss what federal policy could do for more climate protection through peatland conservation. Both were impressed by the activities at the GMC. Cem Özdemir tweeted about his visit: 'In Greifswald you can see the good arguments for the important contribution #peatlands make to #climateprotection. The people of Greifswald can be proud of this!'. Member of Bundestag Anna Kassautzki (SPD), was also interested in this. As a member of parliament for the constituencies of Vorpommern-Rügen and Vorpommern-Greifswald, she is already familiar with the GMC and was brought up to date on site (Fig. 2). Following a peatland excursion near Greifswald, Member of State Parliament Hannes Damm (Bündnis 90/Die Grünen MV), also organised a public discussion on rewetted peatlands and their possible use with the participation of the GMC. The Lower Saxony parliamentary group of Bündnis 90/ Die Grünen and Miriam Staude visited the experimental area for peat moss paludiculture near Oldenburg. Climate researcher Prof. Stefan Rahmstorf from the Potsdam Institut for Climate Impact Research has the German word for peat in his name and peatlands in his sights. During his visit to the GMC, he also learnt about how rewetting and paludiculture can counteract the climate crisis. The GMC also welcomed the well-known entertainer Dr. Eckart von Hirschhausen, with whom it discussed opportunities for cooperation between the GMC and his 'Healthy Earth – Healthy People' foundation.

Fig. 2. Anna Kassautzki, Delara Burkhard and Sophie Hirschelmann (GMC) in the cattail paludiculture area near Neukalen; Cem Özdemir with Franziska Tanneberger (GMC) in the Karrendorf meadows.

Award-winning.

After receiving the German Environmental Award from the German Federal Environmental Foundation last year, Hans Joosten met the Federal President once more in 2022. For the occasion of the Day of German Unity, Hans Joosten received the Order of Merit of the Federal Republic of Germany from Frank-Walter Steinmeier at Bellevue Palace in Berlin for his research and commitment to peatland and climate protection. Commenting on the award for the Dutch-born biologist, Steinmeier said: *'Thanks to Hans Joosten, we now know that drained peatlands are climate killers, while "rewetted" peatlands are climate saviours. The biologist is a pioneer in the search for ways to protect the climate. At the University of Greifswald, he co-founded the Greifswald Mire Centre, one of the world's most sought-after research centres for climate protection. However, Hans Joosten did not stop at scientific research into the relevance of peatlands for the climate. He has shown practical ways in which the areas can*

once again be used for agriculture, and, in doing, so has coined a whole new discipline, 'paludiculture'. In addition to his scientific work, he has always been involved in political debates, because climate protection requires action from everyone.'

Fig. 3. Federal President Frank-Walter Steinmeier presents Hans Joosten with the Order of Merit of the Federal Republic of Germany. (Photo: link)

Peatlands in the arts.

Peatlands and science combined with art - this is what the peat moss installation Turba Tol Hol-Hol Tol offered at the 2022 Venice Art Biennale. The international artist collective ENSAYOS and peatland scientists from the Greifswald Mire Centre joined forces to create a peatland installation in the Chilean pavilion. Supported by the company Moorkultur Ramsloh, a peat moss lawn with a video installation was set up in one of the historic Venetian warehouse buildings. Visitors were able to discover the peat mosses and the moist, vibrating surface formed by them with all their senses. Video sequences convey the fascination of the peatlands with images and sound. The Turba Tol Hol-Hol Tol art project was primarily dedicated to the peatlands of Patagonia and the indigenous population there. At the same time, it shows that the preservation of nature, including peatlands, is in the interest of all present and future societies and that the destruction of nature to date can only be reversed globally through the joint efforts of many local initiatives. This was reaffirmed on 2 June 2022, the 'World Day of Peatlands', together with scientists, artists and representatives from the indigenous population, climate policy, nature conservation and business in the joint (Venice Agreement), which was signed as part of an event. With over 800,000 visitors, the 59th Biennale was the most successful art exhibition of its kind to date.

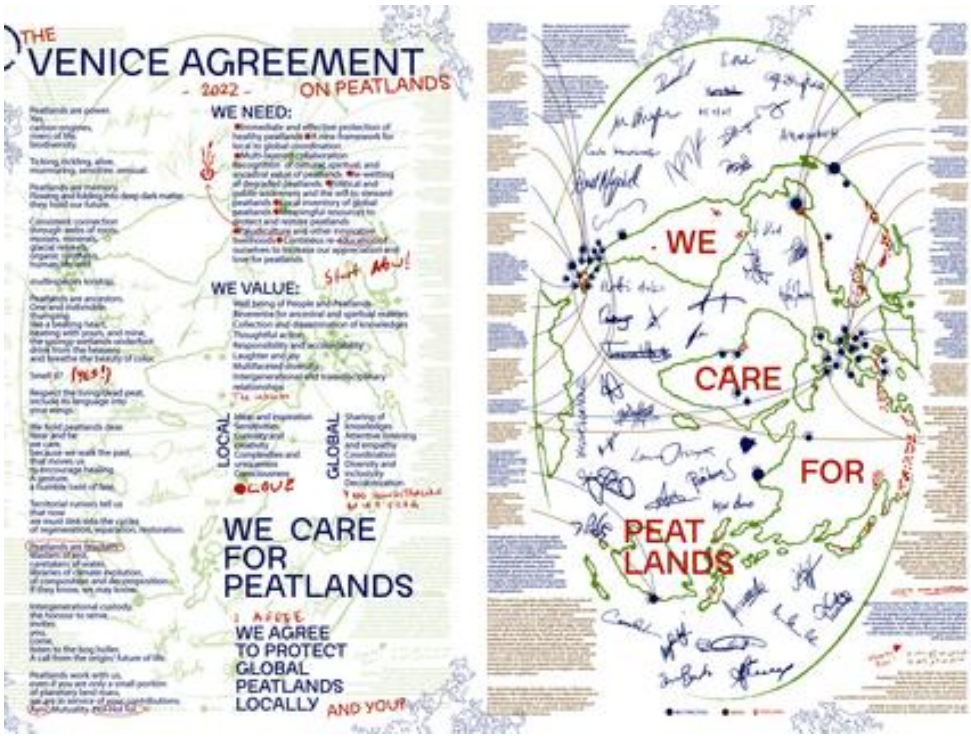
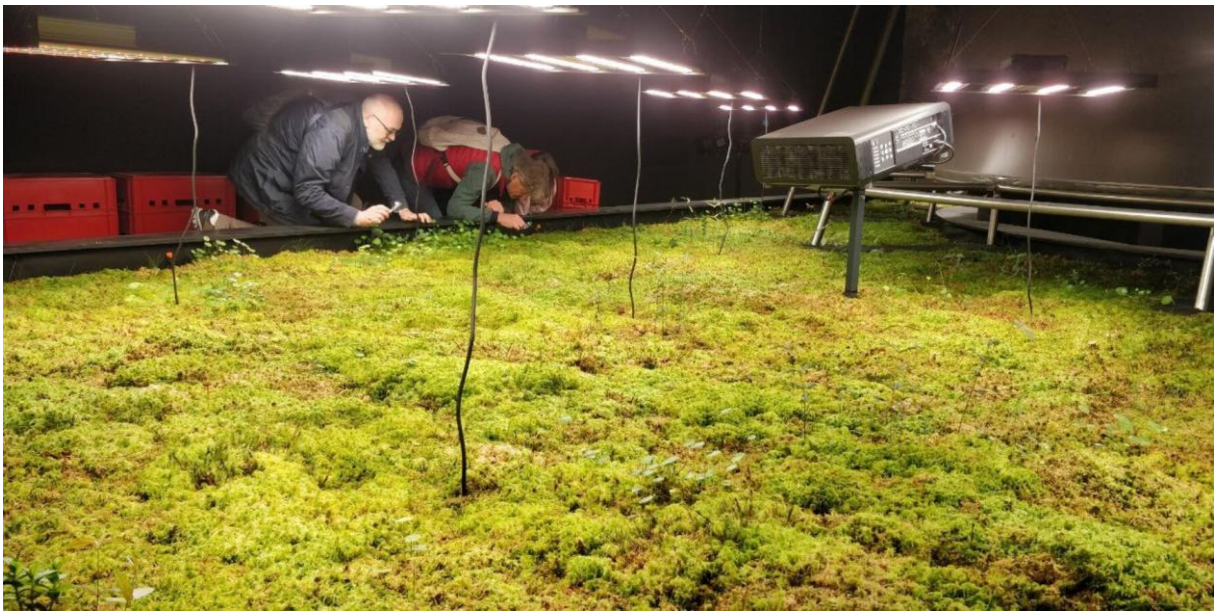


Fig. 4. Venice Agreement (pdf) and Chilean pavillion at the Venice Biennale 2022. (Photo: S. Furtak)



2. Consultation & Participation

Peatland protection on our doorstep.

In the federal state of Mecklenburg-Western Pomerania, the state government set up a 'Peatlandland Protection MV Task Force' in 2022 with five working groups on the topics of legislation, finance, land, alternative uses and training and further education. At least one person from the GMC is involved in each of the working groups. In the working group on legislation, for example, building blocks were developed for the MV Climate Protection Act. In order to accelerate the implementation of rewetting and peatland protection, the GMC has long emphasised the need for central contact points for advice, networking and land management at federal and state level. Mecklenburg-Western Pomerania is planning to establish a 'Moorschutzagentur MV' (Peatland Protection Agency MV) in Greifswald, probably in co-operation with the federal government. The GMC is involved in the planning process.

In February 2022, the 'Decree on the regulation of the forestry law procedure for forest impact in the course of peatland restoration (groundwater elevation) to reduce greenhouse gas emissions' was published by the MV State Forestry Department, according to which no compensation or compensation for forest loss will be necessary in future for areas to be wetted. The discussion on this was initiated by the MV Future Council (led by Dr Franziska Tanneberger) and an inspection of the Mannhagener Moor led by Dr Nina Seifert, Succow Foundation/ GMC, whereupon the GMC and a small group from the State Forestry, StALU and Ministry of Agriculture contributed to the discussion in detail and provided technical support for the development of the action guideline 'Rewetting of wooded bogs - why me?' by the State Forestry Agency.

In order to support the University of Greifswald's goal of being climate-neutral by 2030, the GMC took part in the development of a climate protection strategy and contributed specialised data and proposals for measures as well as concrete financing methods to the lands working group with regard to the rewetting of the university's own peatlands. A new booklet describes peatlands near Greifswald and how they can be explored on a walk[1].

Peatland protection in Germany.

On 28 March 2022, the GMC, in cooperation with the German Association for Landscape Conservation (DVL), organised the conference 'Peatland protection is climate protection' in Berlin as the conclusion of the joint project, which was attended by around 180 people in person and a further 250 people via livestream. A wide range of solutions were presented using practical examples and a discussion was held on how these can be applied on a large scale and accelerated, in a practice-orientated manner, as part of climate protection strategies at various levels in the coming years. The most prominent participant in the discussion panel, Steffi Lemke, Federal Minister for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection, made a promising announcement: '*We must not allow any more crises to accumulate. Wet peatlands are natural climate protection and rewetting in Germany is one of the most effective measures for this. That is why they play an important role in the new action programme, which is estimated to cost 4 billion euros.'* The 'Natural Climate Protection Action

1 Lechtape, C., Schilling, L. & Körner, N. (2022) Moore bei Greifswald – Spazieren in Greifswalds Moorlandschaft. Succow-Stiftung. (pdf)

Programme' (ANK), which was adopted the next day with a cabinet decision and presented to the public, comprises a budget of 4 billion euros for the next four years (until 2026) and has ten fields of action, of which peatland protection is one of the most prominent. In its statement, the GMC assesses the planned measures for peatland protection in the ANK as expedient, but considers the target of 5 million tonnes of CO_2-eq. annual reduction from peatland soils by 2030 to be too unambitious. Instead of 'renaturalisation', a word that suggests uninfluenced natural development after rewetting and the possibility of a return to a previous state of the peatlands, there should be talk of 'rewetting' and 'restoration'. The GMC offers support in the design, implementation and evaluation of measures.

Fig. 5. Federal Environment Minister Steffi Lemke at the panel discussion at the 'Peatland protection is climate protection' conference in Berlin in March 2022. (Photo: S. Busse/GMC)

Additionally, the Federal Ministry of Food and Agriculture (BMEL), together with its research institutions for the protection of peatlands, has developed a concept of measures to largely reduce the use of peat in commercial horticulture by 2030. In the hobby sector, the use of peat is to be phased out by 2026. Numerous funding programmes for the development and use of peat substitutes in horticulture were then initiated to ensure successful implementation. At the University of Greifswald, a partner in the GMC, research is being conducted with partners on the cultivation and use of biomass from paludiculture (peat moss, cattail, reeds) as a peat substitute.

Fig. 6. Advertising board of the Federal Ministry of Agriculture on the subject of 'Peat-free gardening'. (Photo: Bundesministerium für Ernährung und Landwirtschaft)

In a commission to DUENE, a partner in the GMC, incentives for paludiculture for the implementation of the 2030 and 2050 climate protection targets were developed and published by the Federal Environment Agency as a publication of the same name in the 'Climate Change' series (Schäfer et al. 2022). In addition, the GMC itself has published numerous information papers to summarise the current state of knowledge on hotly debated topics and provide concise handouts, e.g. on the role of methane in peatland rewetting or on photovoltaic systems on peat soils. The GMC also commented on the draft Natural Climate Protection Action Programme, on the National Strategy Plan and the associated regulations in Germany, as well as the state parliament motion 'Promotion of peatland protection in Lower Saxony'.

As a result of the project 'Peatland and climate protection: realising practical solutions with land users', an open letter was formulated together with partners to the Federal Ministers Steffi Lemke (Environment), Cem Özdemir (Agriculture) and Robert Habeck (Economy and Climate), in which the willingness for more peatland and climate protection in agricluture is presented and the lack of suitable offers is highlighted.

Peatland protection in Europe.

The EU Commission presented a proposal for the '**Carbon Removal Certification Framework**' (CRCF) in 2022. The law is intended to regulate the framework within which the removal and sequestration of carbon from the atmosphere is certified. The consortium in the PRINCESS project has published an information paper on this, which emphasises the importance of protecting, rewetting and restoring peatlands in this context.

In June 2022, after several postponements, the European Commission published the long-awaited draft of the EU Restoration Law. In the run-up to the decision, the GMC co-coordinated a letter from around 60 organisations from science, environmental protection and agriculture calling on the EU Commission not to postpone publication any further. As an elementary component of the EU Green Deal, the draft sets binding targets for the restoration of ecosystems such as peatlands. The European Commission strongly emphasises the outstanding potential of nature-based measures such as peatland protection to counter the unchecked progression of the climate and biodiversity crisis. As part of

the WATERland project, in which the Succow Foundation is a partner, the statement Higher ambition for Peatlands in the EU Nature Restoration Law Proposal was published, which comments on the draft and recommends improvements with regard to peatlands.

Following the initial steps taken around COP26 in Glasgow towards the establishment of a **European Peatland Initiative**, a workshop was held in Dublin in April 2022, at which the GMC was represented with a central presentation on peatlands in Europe. The workshop was organised by the National Parks and Wildlife Service, Dept. of Housing, Local Government & Heritage and the Dept. of Agriculture, Food and the Marine. In order to provide technical support for such an initiative, a project application was submitted to the European Climate Initiative together with European partners.

Peatland protection worldwide.

The GMC played a key role in compiling the first report on the distribution and condition of peatlands worldwide - State of the Worlds Peatlands – Global Peatlands Assessment: Evidence for action toward peatlands conservation'. This was presented by the GMC and partners at a side event of the COP27 World Climate Summit on 17 November 2022 (Fig. 7). The report includes an updated version of the GMC's Global Peatland Map and provides the latest scientific information on the distribution, trends and threats to peatlands. Above all, however, it recommends measures for the conservation, restoration and sustainable management of peatlands, especially for climate protection and adaptation to climate change. At the side event the spatial data generation and the survey approaches and current gaps in the coverage and resolution of the GPA were presented in detail. In the global context of the UNEA-4 resolution on conservation and sustainable management of peatlands, the GPA could be a step towards a future global peatland inventory. The side event was organised by the Succow Foundation (MSF)/Greifswald Mire Centre (GMC) in cooperation with the United Nations Environment Programme (UNEP), the Global Peatlands Initiative (GPI) and UNEP-WCMC together with the Convention on Wetlands.

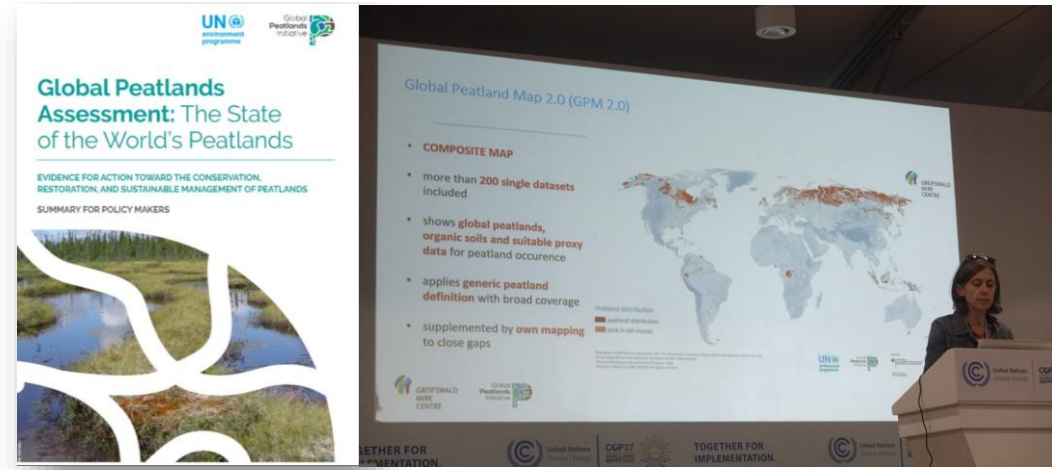


Fig. 7. Franziska Tanneberger presents the Global Peatlands Assessment at COP27 in Sharm el Sheikh.

As part of the DIAPOL-CE project, the Nile Basin Initiative organised a three-day conference on peatlands in the Nile catchment area in Kampala in January 2022 with the support of the Society for International Cooperation (GIZ) and the Succow Foundation. The conference drew attention to the fact that the Nile and its runoff are strongly influenced by the water regulation of tropical peatlands in the upper catchment area of the affected Great Lakes in East Africa and that these areas also represent immense

carbon reservoirs. Participants were government and civil society representatives from Tanzania, Burundi, Rwanda, Uganda and South Sudan. They now have a better understanding of where peatlands are found and how they function. Topics included the climate-friendly management of peatlands and value chains for products from wet peatlands, e.g. papyrus along the Nile. Uganda is the first country to integrate peatlands as a nature-based solution for climate change mitigation and adaptation in its Nationally Determined Contributions (NDCs) to achieve its climate change targets. The GMC was involved in this process.

In October 2022, Hans Joosten (GMC) was invited to speak about the importance of peatlands at a side event at the G20 conference under the patronage of Indonesia. Talks were also held with the Deputy Minister and the Secretary General of the Ministry of Environment and Forestry in Indonesia on peatlands, their rewetting and sustainable use.

3. Implementation

Rewetting of our own areas.

To improve the hydrological system of the Karrendorfer Wiesen coastal flood peatland (owned by the Succow Foundation), the tideway system was optimised over an area of approx. 170 ha (Fig. 8). About 2,700 meters of silted-up tidal creeks were dredged to improve the inflow and outflow of floodwaters and to restore a more natural dynamic. In addition, fords and a footbridge for grazing cattle were created in order to integrate previously ungrazed, reedy areas into pasture utilisation and to promote the growth of typical plant species of salt grassland (e.g. Bodden rush).

Fig. 8. Optimised tidal channel system in the Karrendorfer Wiesen coastal flood peatland near Greifswald. (Photo: Nina Seifert)

As part of a preliminary planning process, possible variants of measures were developed to achieve extensive water level increases on 80 ha in the so-called “peat meadows” in the **Sernitz lowlands** (Brandenburg). The preferred option includes the complete closure of ditches within the grassland areas, raising the bed level along the course of the Sernitz River, and increasing the impoundment level of a main drainage ditch. These measures are intended to establish near-surface water levels across most of the area. Future agricultural use is still planned. To this end, potential uses for the biomass are being identified, and local infrastructure (e.g. additional access routes and storage areas) is being taken into account in the planning process.

For the revitalization of the approximately 40 ha **Mannhagener Moor** (near Greifswald, Mecklenburg-Western Pomerania), the detailed design and approval planning was prepared in 2022 and closely coordinated with the Mecklenburg-Western Pomerania State Forestry Agency as an additional landowner. In addition to dismantling the drainage infrastructure, the measures also include extensive thinning of the forest stand that has developed over recent decades as a result of low water levels.

How practical - application orientated research projects.

As part of the BMBF-funded WIR! alliance Plant³ at the University of Greifswald, in which innovative strategies for the high-quality refinement of plant-based raw materials in the three raw material sources LAND, MOOR and SEA are being developed, two projects with paludiculture topics were launched in 2022: 'Bio-based plastic products from paludiculture' and 'Integration of the water buffalo into the value chains of paludiculture and the plant-based bioeconomy'.

Tab. 2. Projects launched at the GMC in 2022.

Acronym	Title	Partner	Sponsor	Duration
German peatland protection strategy	Technical support for the implementation of the national peatland protection strategy and networking of stakeholders	DUENE	BfN	08/2022-01/2026
Sectoral study MV	Sector target study on climate protection in Mecklenburg-Wetsern Pommerania	DUENE	Land MV	10/2022-07/2023
Plant³ Paludi-Product	WE! - Plant³: Paludi Product - Bio-based plastic products from paludiculture	University of Greifswald	BMBF	10/2022-09/2025
Plant³ Buffalo farming	WE! - Plant³: Integration of the water buffalo into the value chains of paludiculture and the plant-based bioeconomy	University of Greifswald; University of Rostock	BMBF	02/2022-02/2025
WATERlands	Water-based solutions for carbon storage, people and wildlife	Succow Foundation, University College Dublin (UCD), Ireland + 30 other partners from 14 European countries	EU Horizon Europe	12/2021-11/2026
ALFAwetlands	Wetland restoration for the future	Succow Foundation + partners in Belgium, Estonia, Finland, France, Latvia, Lithuania, Netherlands, Austria, Sweden, Spain	EU Horizon Europe	06/2022-11/2026

Wet Horizons	Upgrading knowledge and solutions to fast-track wetland restoration across Europe	University of Greifswald + Aarhus University, Radboud University Nijmegen, PBL Netherlands Environmental Assessment Agency, Potsdam Institut für Klimafolgenforschung, Finnish Metereological Institute, Wetlands International, LSCE Laboratory for Sciences of Climate and Environment, Global Peatlands Initiative, European Science Communication Institute	EU Horizon Europe	09/2022-08/2026
Paludi PROGRESS	Practical test of paludiculture: optimisation of cattail and reed cultures	University of Greifswald, LFA MV	BMEL	09/2022-08/2025
Bio-NET	Multi-level assessment of Bio-based Negative Emission Technologies	University of Greifswald, Helmholtz Centre for Environmental Research (UFZ), Deutsches Biomasseforschungszentrum (DBFZ), Thuenen Institute for International Forestry and Forest Economics (TI-IFFE), Justus-Liebig-University Gießen (JLU), University of Applied Sciences Zittau/Görlitz (HSZG), Technical University Munich (TUM)	BMBF	01/2022-12/2024
CuliMoor	Mosquitoes (Diptera: Culicidae) in rewetted peatlands and the assessment of the occurrence of zoonoses	University of Greifswald, Friedrich-Loeffler-Institute, Institute of Infection Medicine - Laboratory for mosquito monitoring	German Zoonosis Platform	2022-2025
ReWetSpec	Development of hyperspectral indicators for monitoring rewetting measures on fens	University of Greifswald, Thünen-Institute	BMBF	2022-2025

4. Research

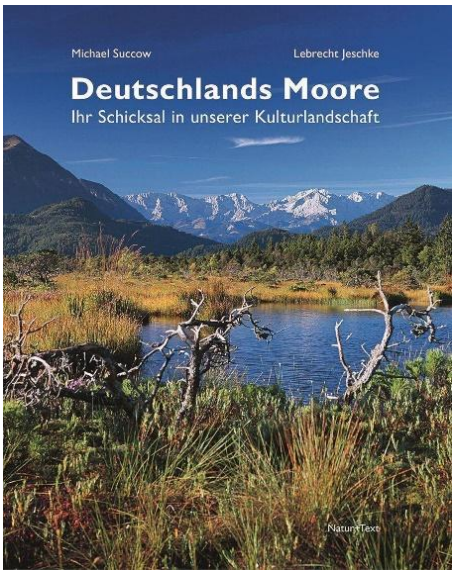
Consolidating peatland research.

In 2022, the second appointment procedure to fill the W3 Chair of Peatland Science at the University of Greifswald was successfully completed and Gerald Jurasinski was appointed. Gerald Jurasinski studied "Land Culture and Environmental Protection" at the University of Rostock. From 2000, the graduate engineer worked under Prof Carl Beierkuhnlein at the Universities of Rostock and Bayreuth and, following fieldwork in the north-east Moroccan high plateau, completed his doctorate in 2007 on the subject of "Spatio-temporal patterns of biodiversity and their drivers - Method development and application". As a PostDoc back at the University of Rostock, he conducted research with Professor Stephan Glatzel on greenhouse gas exchange and the carbon cycle as well as on long-term and medium-term vegetation development in peatlands and forests. Following several successfully acquired research projects, he was interim head of the "Landscape Ecology and Site Ecology" professorship there from 2014 to 2017. He has held visiting positions at the University of Bergen, Norway, and several times at the University of Vienna, Austria. From 2023, he will hold the only W3 professorship for peatland science in Germany at the University of Greifswald.

Creating knowledge.

Numerous new research projects were launched at the GMC in 2022 (Tab. 2). The Bio-NET project is investigating how peatlands can contribute to negative emissions and carbon sequestration. The Paludi-PROGRESS project is researching how cattail and reed cultivation can succeed and be optimised in practice. Mosquitoes are often associated with rewetted peatlands. The Culi-Moor project is investigating whether mosquitoes really do occur more frequently here compared to drained peatlands and how possible zoonoses should be assessed. In addition, three EU Horizon projects have been launched to implement and accelerate the restoration of wetlands across Europe. To this end, knowledge on the distribution and condition of peatlands as well as on ecological, social and economic aspects is being expanded and communicated using integrated practical examples ("living labs").

In 2022, 48 **articles**, 15 of which were **scientific**, were published under the leadership of or with the involvement of GMC members (see list below). These mainly focus on research into paludiculture, root formation under dry conditions and pattern formation in raised bogs. Of particular note is an article with the participation of Hans Joosten (GMC) in the renowned scientific journal Science (Temmink et al. 2022), which shows that peatlands, salt marshes, mangrove forests and seagrass fields contain around five times more carbon per square metre than forests and 500 times more than oceans. The reason for this is that plant growth and carbon deposition in the soil stimulate each other in these wet ecosystems.



The book "Deutschlands Moore - Ihr Schicksal in unserer Kulturlandschaft" by Michael Succow and Lebrecht Jeschke was published in January 2022. On 544 pages, it depicts the diversity of the country's peatland lanscapes- 115 sites from the coastal peatlands, the raised bogs of north-west Germany and the river valley fens in the southern Baltic Sea region to the peatlands of the low mountain ranges, the foothills of the Alps and the edge of the Alps. The book presents near-natural and degraded peatlands in all parts of Germany. In addition to the 908 photos, numerous tables, diagrams, information boxes and maps make the complicated interrelationships easy to understand. The contribution by Dr Greta Gaudig and Dr Franziska Tanneberger, directors of the GMC, provides an outlook on the future of peatlands, their rewetting and sustainable use.

In other publications of a more popular scientific character, members of the GMC have contributed with articles on peatlands. Prominent authors such as Hans J. Schellnhuber, Stefan Rahmstorf and Jutta Allmendinger describe in the book "3 degrees more" what threatens nature and society, as we are heading towards such high global warming despite the agreements of the Paris Climate Agreement, but also how we can prevent the worst. The chapter by Hans Joosten explains how the rewetting of peatlands can help combat the climate crisis. With "Peatlands - trump cards in the climate crisis", an entire issue of the journal 'Politische Ökologie' published by Oekom-Publishing house, co-edited by the Succow Foundation as a partner in the GMC, is also dedicated to this topic. It contains numerous articles by GMC authors on topics such as the climate impact of peatlands, paludiculture, the political and legal framework and the financing of peatland protection measures.

5. Networking

Strengthening cooperations, expanding networks.

The Greifswald Mire Centre cooperates with many partners in numerous projects and sees itself as part of a global network of scientists, NGOs and practitioners working on and in peatlands. Existing partnerships were continued and deepened and in 2022, new collaborations were initiated with two local institutions. In April 2022, the new Helmholtz Institute for One Health (HIOH) in Greifswald was inaugurated as a new site of the Helmholtz Centre for Infection Research (HZI). HIOH considers the health of humans, animals and the environment as an inseparable whole and its research is also dedicated to the topic of peatlands. The Friedrich Loeffler Institute (FLI) in Greifswald is the Federal Research Institute for Animal Health and researches in particular the health and welfare of farm animals and the protection of humans from zoonoses. It is also home to the laboratory for mosquito monitoring, with which an initial joint project with the GMC was started (see Tab. 2). In May 2022, 'Agora Agrar' was founded as a new think tank for scientific policy advice on agriculture, forestry and food. One of the main topics of the new think tank is the rewetting of peatlands. The GMC held talks on this topic during the founding phase and has been in close dialogue ever since. At international level, cooperation with Eurosite has been intensified and a friendship agreement has been signed with the GMC. Cooperation has continued within the Global Peatlands Initiative. The process for developing the Global Peatlands Assessment was coordinated by the GMC, among others, and the GMC's good contacts with peatland researchers worldwide contributed to the close networking of the author teams. In 2022, Hans Joosten and Franziska Tanneberger (GMC) were elected to the Main Board of the International Mire Conservation Group (IMCG) and confirmed by the IMCG General Assembly in South Africa. Both were then elected with Jan Peters and John Couwenberg (GMC) as General Secretariat of the IMCG.

In 2022, the Succow Foundation and the Michael Otto Environmental Foundation continued their joint initiative "**toMOORow** - Wet Peatlands for a Sustainable Future". Progress has been made in all fields of action: the model rewetting of the Sernitzmoor (Brandenburg) and peatlands in the Baltic States is in the planning phase, a legal opinion on voluntary certificates has been prepared for valorisation through compensation certificates and discussions are underway with various stakeholders, and a potential study has been commissioned for the development of paludiculture value chains.

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Publications of the GMC in 2022

GMC-Publication series

Nordt, A., Abel, S., Hirschelmann, S., Lechtape, C. & Neubert, J. (2022) Leitfaden für die Umsetzung von Paludikultur. Greifswald Moor Centrum-Schriftenreihe 05/2022 (Selbstverlag, ISSN 2627–910X), 144 S.

Abel, S. & Kallweit, T. (2022) Potential Paludiculture Plants of the Holarctic. Greifswald Moor Centrum-Schriftenreihe 04/2022 (Selbstverlag, ISSN 2627-910X), 440 S. (auf Englisch)

Elshehawi, S., Kaiser, M., Peters, J. & Joosten, H. (2022) Opportunities for including peatlands in Nationally Determined Contributions (NDCs) by linking them to mangroves with special attention to the Caribbean region. Greifswald Moor Centrum-Schriftenreihe 03/2022 (Selbstverlag, ISSN 2627-910X), 26 S. (auf Englisch)

De Klerk, P. (2022) May your reeds be great reeds - A collection of essays on reedland texts and pictures from ancient cultures. Greifswald Moor Centrum-Schriftenreihe 02/2022 (Selbstverlag, ISSN 2627-910X), 43 S. (auf Englisch)

Wichmann, S., Reichelt, F. & Nordt, A. (2022) Herleitung von Förderpauschalen zur Umsetzung von Moorklimaschutzprojekten. Greifswald Moor Centrum-Schriftenreihe 01/2022 (Selbstverlag, ISSN 2627-910X), 33 S.

Fact papers and statements

Faktenpapier: Die Rolle von Methan bei Moor-Wiedervernässung

(Fact paper: The role of methane in peatland rewetting)

Stellungnahme des Greifswald Moor Centrum zum Entwurf Aktionsprogramm Natürlicher Klimaschutz

(Statement by the Greifswald Mire Centre on the draft action programme for natural climate protection)

Policy Brief: Higher ambition for Peatlands in the EU Nature Restoration Law Proposal

Offener Brief an die Bundesminister*innen: Moor- und Klimaschutz in der Landwirtschaft: Bereitschaft ist da, aber geeignete Angebote fehlen

(Open letter to the federal ministers: Peatland and climate protection in agriculture: willingness is there, but suitable offers are lacking)

Position on the role of peatland conservation, rewetting and restoring within the carbon removal certification framework proposed by the European Commission (together with the University of Warsaw, der University of Antwerp, the University of Vienna, the Norwegian Institute for Nature Research NINA and the Institute for Natural Resources Finland LUKE)

Weichenstellung für mehr Moorbodenschutz ab 2023? Anmerkungen zum Nationalen Strategieplan und den damit verknüpften Regularien in Deutschland

(Setting the course for more peatland protection from 2023? Comments on the National Strategic Plan and the associated regulations in Germany)

Informationspapier des Greifswald Moor Centrum zu Photovoltaik-Anlagen auf Moorböden

(Information paper of the Greifswald Mire Centre on photovoltaic systems on peat soils)

Stellungnahme des Greifswald Moor Centrum zum Antrag „Förderung von Moorschutz in Niedersachsen“

(Statement of the Greifswald Mire Centre on the application ‘Promotion of peatland protection in Lower Saxony’)

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