

Status and main results of the Nordic Baltic peat project

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Ramsar, peatlands and climate

- History of Ramsar, peatlands and climate (John)
- Resolution XI.8 ‘Streamlining procedures for describing Ramsar Sites ...’:
- significant feature of peatlands: “capacity to sequester carbon from the atmosphere and store it for long periods of time”
- “special attention should be given to the designation of peatlands which have at least some of the following attributes: ...
 - the presence of a peat-forming vegetation; ...
 - the capacity to act as a carbon store;
 - the presence of a carbon sequestration function”.

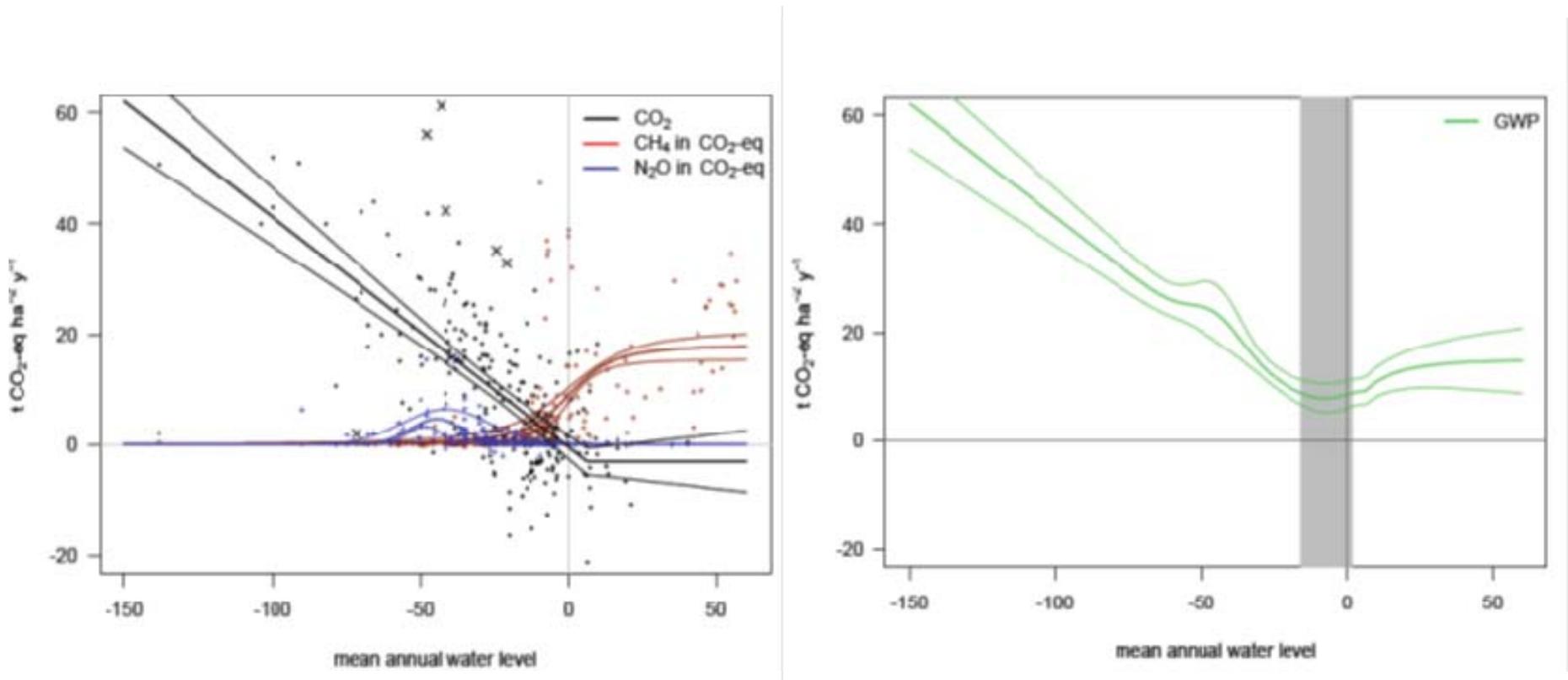
Are peatlands important for climate?

- Peatlands constitute the largest terrestrial store of carbon.
- Under natural conditions peatlands act as a net carbon sink, removing carbon dioxide (CO₂) from the atmosphere
- At the same time they emit methane (CH₄).
- When drained they release large amounts of CO₂ and nitrous oxide (N₂O).

GHGs from peatlands are complex

- Different gases with
- Different global warming potential
- Different atmospheric residence

GHGs from peatlands are **not** complex



Water table is most important factor

- Drained peatlands constitute a disproportionately large climate burden.
- Drained peatland (0.3% of the world's land area) is responsible for 5% of all anthropogenic CO₂ emissions, tendency increasing.
- In Europe, drained agriculturally used peat soils are responsible for a large part of the greenhouse gas emissions from agriculture.

- A substantial reduction of GHG emissions can be achieved by rewetting drained peatlands.
- Rewetted peatlands do not become 'positive' for the climate because of re-introduced CH₄ emissions
- Net GHG emissions from rewetted peatlands are, however, much lower than those from drained peatlands.

- In the studied NorBalWet countries 43.8 % of the peatland area has been drained
- Norway and Sweden have drained less than 20%.
- All other countries (excl. Greenland) have drained over 2/3 of their peatland area.

- The studied NorBalWet countries contribute 6% to the worldwide anthropogenic peatland CO₂-emissions and 0.2 % to the total global anthropogenic CO₂-emissions.

Peatland emissions are nationally important

- In Iceland and Latvia the peatland emissions are almost double as large as the total CO₂-emissions from all other sources (excl. LULUCF).
- In Estonia, Lithuania and Finland peatland CO₂-emissions amount to half of the emissions.
- In Sweden emissions amount to 33%.
- Only in Norway, Denmark and Greenland peatland emissions are less than 10% of the total other CO₂-emissions (excl. LULUCF).

	Total CO ₂ emissions without land use	Total peatland CO ₂ emissions	
	Mt CO ₂ yr ⁻¹	Mt CO ₂ yr ⁻¹	%
Estonia	17.079	7.248	42.4
Latvia	7.434	13.368	179.8
Lithuania	14.184	7.237	51.0
Finland	50.700	20.677	40.8
Sweden	45.710	15.124	33.1
Norway	52.700	3.466	6.6
Iceland	3.324	5.681	170.9
Denmark	38.303	1.591	4.2
Greenland	0.600	0.006	1.0
Total	229.434	74.398	32.4

Why Iceland in spite of small population?



Iceland uses much hydro-energy



Iceland uses much geothermal energy



Iceland uses very little CO₂-emitting energy



But Iceland has drained very much peatland...



... and therefore has worked to bring peatland rewetting under Kyoto, as the only possibility to reduce emissions



What about other conventions?

- UNFCCC and Kyoto Protocol have largely neglected peatlands.
- Only since 2011 some recognition (KP, REDD+).
- KP accounting extremely complex and unfair.
- A stronger involvement of Ramsar in the UNFCCC discussions on a national and international level could counterbalance the very strong forest bias in UNFCCC.

What about other conventions?

- CBD COP10 Aichi Targets (Nagoya, Japan, 2010, Decision X/2):
- Target 5: “By 2020, the rate of loss of all natural habitats, including forests, is at least halved and where feasible brought close to zero, and degradation and fragmentation is significantly reduced.”
- Target 15: “By 2020, ecosystem resilience and the contribution of biodiversity to carbon stocks have been enhanced, through conservation and restoration, including restoration of at least 15 per cent of degraded ecosystems, thereby contributing to climate change mitigation and adaptation and to combating desertification.”

What about other conventions?

- Do the Aichi targets imply that some 2,500,000 ha (= 15%) of the peatlands drained for agriculture, forestry and peat extraction in the NorBalWet countries (incl. the European part of Russia) have to be restored by 2020?

What about other conventions?

- Under the EU new rules, accounting for GHG fluxes from Cropland Management (CM) and Grazing land Management (GM) shall become mandatory from 2021 onwards.
- EU wants to have peatland drainaing and rewetting reported “with a view to including this obligation in the global climate agreement to be concluded no later than 2015.”

- This new decision effectively imposes mandatory accounting for most rewetting activities, as 90% of the drained peatlands are drained for agriculture (and thus fall under Cropland or Grazing land Management) or forestry (for which all activities since 2013 already have to be mandatorily accounted under the Kyoto Protocol).
- WDR accounting proper would virtually cover little more than rewetting of current and former peat extraction sites.

European Union

- Peatland agriculture is responsible for the vast majority of emissions from peatlands.
- The EU Common Agricultural Policy (CAP) provides 300 billion euro (2014-2020) to 'direct payments' (First Pillar) under the condition of 'cross-compliance'.
- Agriculture on deeply drained peat still receives unrestricted direct payments → EU subsidizes peatland drainag.
- Agri-environmental climate measures under Second Pillar may become strong incentive for peatland conservation and restoration.

EU Habitats Directive

- Natura 2000 network of protected sites and the strict system of species protection.
- EU Biodiversity Strategy: by 2020
- “halt deterioration of all species and habitats covered by EU nature legislation”
- “achieve a significant improvement in their status”
- “restore at least 15% of degraded ecosystems”.

EU Water Framework Directive

- Through Article 1 mires and peatlands are protected by the Water Framework Directive against further deterioration.
- Wetland restoration is explicitly suggested in the programme of measures.

HELCOM: Helsinki Convention

- HELCOM Baltic Sea Action Plan aims at restoring the good ecological status of the Baltic marine environment by 2021.
- Peatland rewetting has been adopted by various member states to reduce the emission of nitrogen and phosphorous to the Baltic Sea.

- Many rules and regulations support the options of the Ramsar Convention to protect and restore peatlands for climate.
- Especially the ‘wise use’ concept of the Ramsar Convention may provide an important bridge between these initiatives.
- Both on an international and a national level cooperation will provide synergies, that will benefit from the wetland and peatland expertise of the NorBalWet countries.



CONVENTION ON WETLANDS

(Ramsar Iran, 1971)

ქობულეთის დაცული ტერიტორიები, რომელიც მოიცავს 770 ჰექტარს, მთავრობის მიერ შეტანილია საერთაშორისო მნიშვნელობის ჭარბტენიანი ტერიტორიების ნუსხაში, რომელიც შექმნილია "საერთაშორისო მნიშვნელობის ჭარბტენიანი, განსაკუთრებით, წყლის ფრინველთა საბინადროდ ვარგისი ტერიტორიების შესახებ" შექმნილი კონვენციის შესაბამისად. კონვენციას ხელი მოეწერა რამსარში (ირანი) 1971 წელს, მსოფლიოს ჭარბტენიანი ტერიტორიების კონსერვაციისა და მდგრადი გამოყენების მიზნით.

THIS SITE, COVERING 770 HECTARES, HAS BEEN DESIGNATED BY THE NATIONAL GOVERNMENT FOR INCLUSION IN THE LIST OF WETLANDS OF INTERNATIONAL IMPORTANCE ESTABLISHED UNDER THE CONVENTION ON WETLANDS THE INTERNATIONAL TREATY SIGNED IN RAMSAR (IRAN) IN 1971 TO PROMOTE THE CONSERVATION AND SUSTAINABLE USE OF WETLAND AREAS WORLDWIDE.

Ramsar designation and climate

- An adequately protected pristine mire does not contribute to climate change mitigation.
- To contribute to climate change mitigation, drained peatlands have to be rewetted.
- GHG fluxes have no direct relevance for the regional climate:
- the protection of an equivalent area of peatland in Indonesia would have the same effect on the regional climate around Lille Vildmose as the protection of Lille Vildmose itself.

Ramsar designation and climate

- Lille Vildmose will remain a net greenhouse gas emitting ecosystem, in spite of the carbon sequestration taking place.
- The GHG fluxes from Lille Vildmose represent 1 % of the total Danish peatland emissions and 0.02 % of the total emissions of Denmark.
- The peat carbon content of Lille Vildmose is estimated 10% of the total peat carbon volume of Denmark.

Ramsar designation and climate

- Worldwide peat disappears 10 times faster than it has been formed.
- Asking the question which peatlands to protect to prevent the world's peat volume from decreasing, is like asking which regional populations to conserve of a species whose death rate is globally 10 times larger than its birth rate.

Ramsar designation and climate

- To maintain the global peatland carbon stock, > 350 million ha of the world's peatlands have to be conserved or restored.
- To restore the global peatland climate cooling capacity, 100% of the peatlands should be conserved or restored.
- Conservation and restoration of Lille Vildmose protects 0,001 % of the global peatland carbon stock
- The 25,000,000 ha of Arctic polygon mires 1%, the 13,150,000 ha of peatlands in Sumatra and Kalimantan 5% and the 1 90,000,000 ha peatlands of West Siberia 10%.

Ramsar designation and climate

- Every designation of a peatland contributes to this global goal.
- The larger the sequestration capacity and the larger the peatland carbon stock, the more the peatland contributes.
- A minimum threshold does not exist:
- conservation of every peatland contributes to climate change mitigation, whereas drainage of every additional peatland constitutes an additional burden.

Ramsar designation and climate

- There are many reasons for designating peatlands as Ramsar Wetlands of International Importance, including the many ecosystem services that peatlands provide.
- Whereas most ecosystem services have a regional character, the regulation of the climate is only relevant from a global perspective.
- The contribution of every individual peatland to global climate regulation is only (very) small.

- As a worldwide effective instrument for conserving wetlands, Ramsar should strengthen efforts to conserve and restore the climate regulation function of the world's peatlands.

Ramsar designation and climate

- Designation as Ramsar Wetlands will only make a small contribution, as it will only concern a few sites.
- Designation using the climate function as an *additional* argument will contribute to the further recognition of the important role of peatlands for the world's climate.
- Using this argument as the *exclusive* criterion will, in contrast, give the wrong impression that individual peatlands contribute decisively, therewith hampering the necessary comprehensive conservation of all peatlands as carbon sinks and stores.

Ramsar designation and climate

- Deeply drained peatlands used as cropland have the best climate change mitigation potential.
- These areas are, however, often the least interesting from a biodiversity point of view.
- The best option is to designate a complex with
 - major parts that deserve designation on their own merit
 - major degraded parts where restoration will
 - strengthen the conservation of adjacent good parts , and
 - lead to a substantial emission reduction
 - nationally significant peat carbon stocks.

Ramsar designation and climate

- Climate will benefit more from an all-encompassing wise use of all peatlands worldwide.
- Ramsar should intensify its efforts in pursuing such comprehensive approach, in cooperation with the many initiatives already being undertaken.
- Such wise use strategy would encompass:
 - Securing all undrained peatlands
 - Rewetting/restoring all drained peatlands
 - If you need to use them, use them wet (paludicultures)
 - Adapt the management of peatlands that cannot be rewetted.

Ramsar designation and climate

- Crucial in such strategy could be to use peatland Ramsar sites as centres for raising awareness
- Such centres will be specifically effective where
 - natural, degraded and restored peatlands can be contrasted,
 - drivers and effects of non-wise use are apparent,
 - ample opportunity exists for communication, education and public awareness, and
 - a relevant audience is easily available.
- These attributes can support designating a peatland (complex) as a Wetland of International Importance.