

# **On the way to an Austrian Mire Protection Strategy**

**Stephan Glatzel  
Gerhard Schwach  
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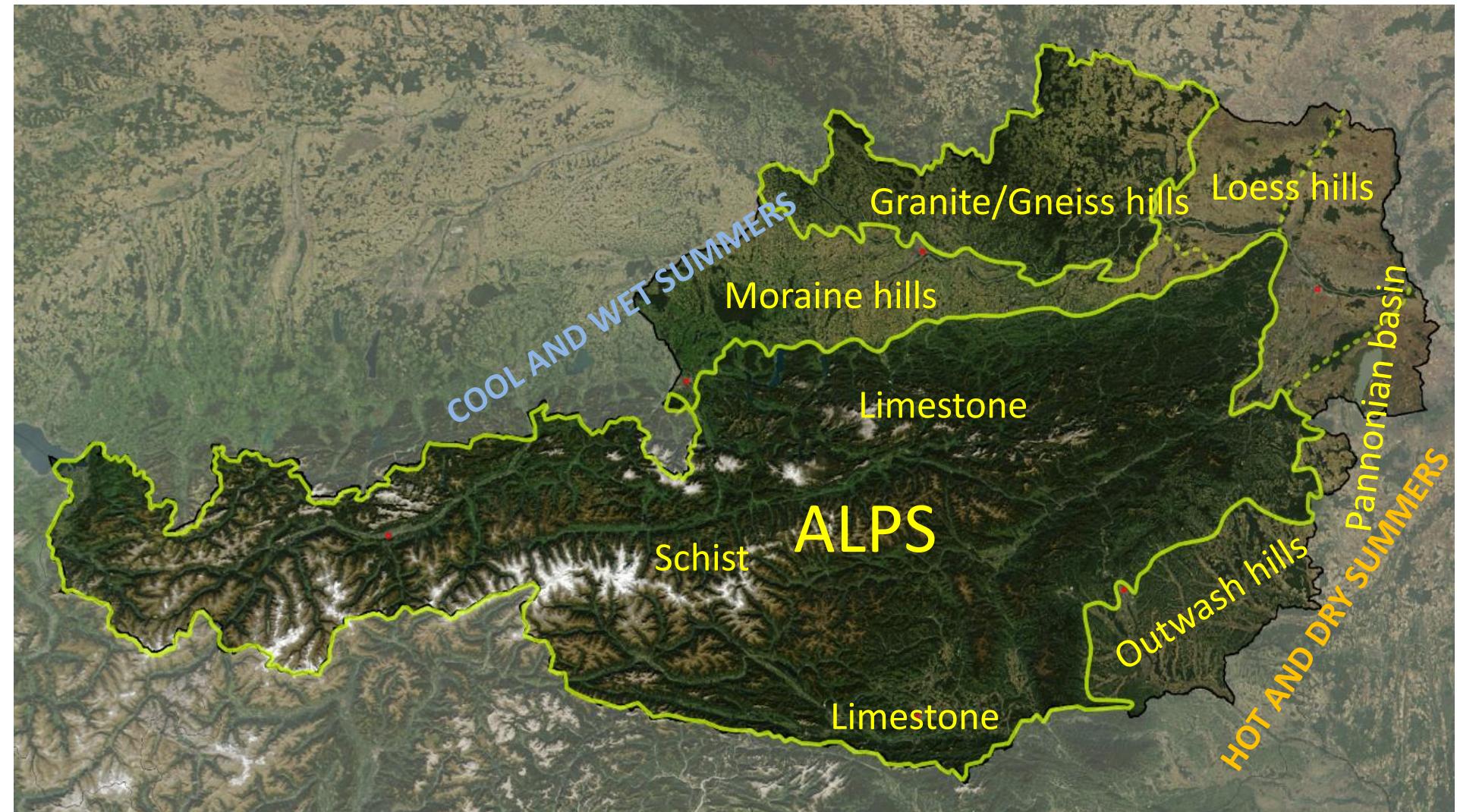
# Issues

- Physiographic diversity of Austrian mires
- Status of Austrian Peatlands
- Existing legislative framework
- ...and its execution
- New issues: Ecosystem services and greenhouse gases
- Structures and coordination

A wide-angle photograph of a mountain landscape. In the foreground, there's a large, open, green grassy area, likely a mire. Behind it is a dense forest of tall evergreen trees. In the distance, a large, dark, rounded mountain peak rises against a blue sky filled with white and grey clouds. The perspective is from a low angle, looking across the meadow towards the horizon.

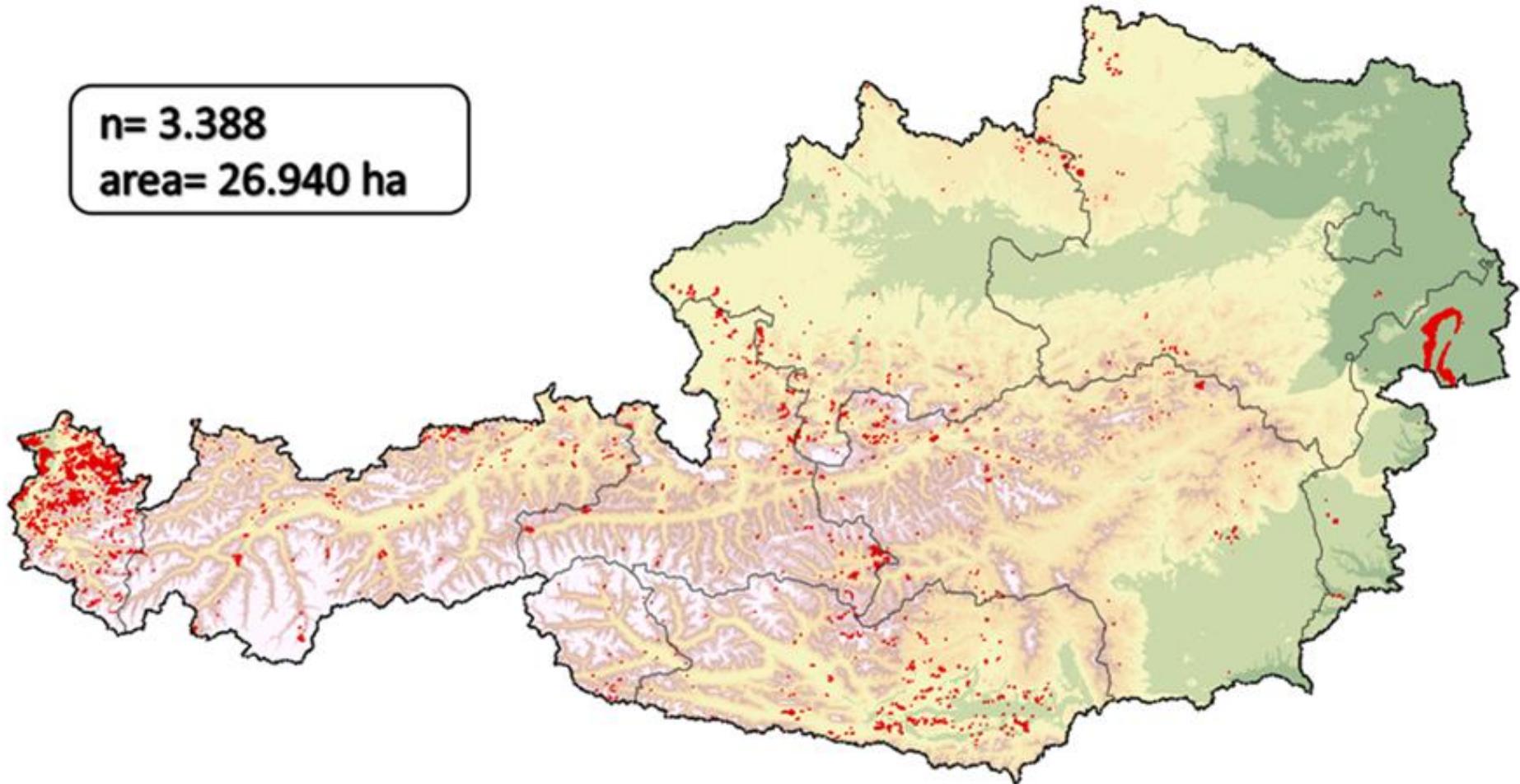
# Physiographic setting of Austrian mires

# Physiographic setting for Austrian mires



# Austrian mire database

n= 3.388  
area= 26.940 ha



*Database Reiter & Steiner, 2013*

# Size and conservation status of different mire types in Austria, based on the Austrian mire conservation data base

Mire type	Undisturbed	Disturbed	Total	share of Austria (83,871 km <sup>2</sup> = 100%)
	[ha]	[ha]	[ha]	[%]
Raised bog	1650	2292	3942	0.047
Condensation mire	30		30	0.000
Blanket bog	161		161	0.002
Rainfed mires	1840	2292	4132	0.049
Complex mire	161		161	0.002
Transition mire	375	304	679	0.008
Kettle hole mire	40		40	0.000
Transition mires	576	304	879	0.010
<b>Bogs and transition mires</b>	<b>2416</b>	<b>2595</b>	<b>5012</b>	<b>0.060</b>
Percolation mire	636	1757	2393	0.029
Spring mire	278		278	0.003
Inundation mire	374	2066	2440	0.029
Surface flow mire	911	2141	3052	0.036
Terrestrialisation mire	1520	667	2188	0.026
Paludification mire	333	1125	1458	0.017
<b>Fens</b>	<b>4051</b>	<b>7757</b>	<b>11,808</b>	<b>0.141</b>
<b>Total mire area</b>	<b>6467</b>	<b>10,352</b>	<b>16,820</b>	<b>0.201</b>

*Grüning & Steiner, 2010, modified*

The image shows a wide, open landscape in a mountainous region. In the foreground, there is a large area of wetland vegetation, characterized by low-growing plants and small, thin trees with white bark. Beyond the wetland, a valley opens up, showing more green fields and some small buildings. The background features several majestic mountains under a clear blue sky with a few wispy clouds.

**Steps advancing mire protection in Austria**

# Legislative framework

NATIONAL

INTERNATIONAL

1971 RAMSAR convention (Austria joined 1982)

1994 United Nations Framework Convention on Climate Change (UNFCCC)

1996 Convention on Biological Diversity (CBD)

1999 Austrian Wetlands Strategy

2002 Austrian Biodiversity Goals

2002 RAMSAR Strategic Plan 2003-2008

2006 IPCC Guidelines for National Greenhouse Gas Inventories

2008 Reducing Emissions from Deforestation and Forest Degradation (REDD)

2010 WWF Study Peatlands in Climate Change

2013 Supplement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories: Wetlands

2014 Austrian Biodiversity Strategy

Just paper or real progress?

## Naturschutzbund Österreich 2010:

„In the last 200 years, Austria has lost >90% of its peatland area,  
250.000 ha“

intact:	7.000 ha	}	21.000 ha
hydrologically disturbed:	14.000 ha		
intensive agricultural use:	100.000 ha		
...of which pasture	10.000 ha		
...of which meadows	30.000 ha		
...of which arable land	60.000 ha		



# Threats

## PAST

- Peat extraction
- Drainage and subsequent land-use intensification
- Large-scale drainage projects (i.e. Ennstal)

## PRESENT

- Small-scale drainage and land use changes
- Eutrophication
- Encroachment of shrubs and competitive plant species
- Pasture on peatlands

## FUTURE

- Climate change

*Steiner & Essl, in press*

# Success stories: Überling



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# Success stories: Torfstube

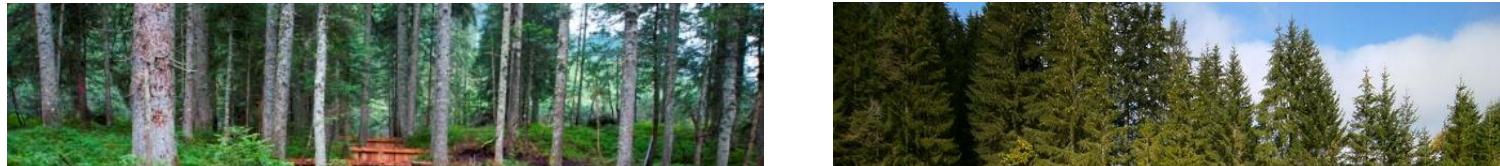


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# Success stories: Brettersberg



# Success stories: Federal forestry agency taking responsibility for peatlands



But:



Bundesforste.at



# Future challenges

## Naturschutzbund Österreich 2010:

„In the last 200 years, Austria has lost >90% of its peatland area,  
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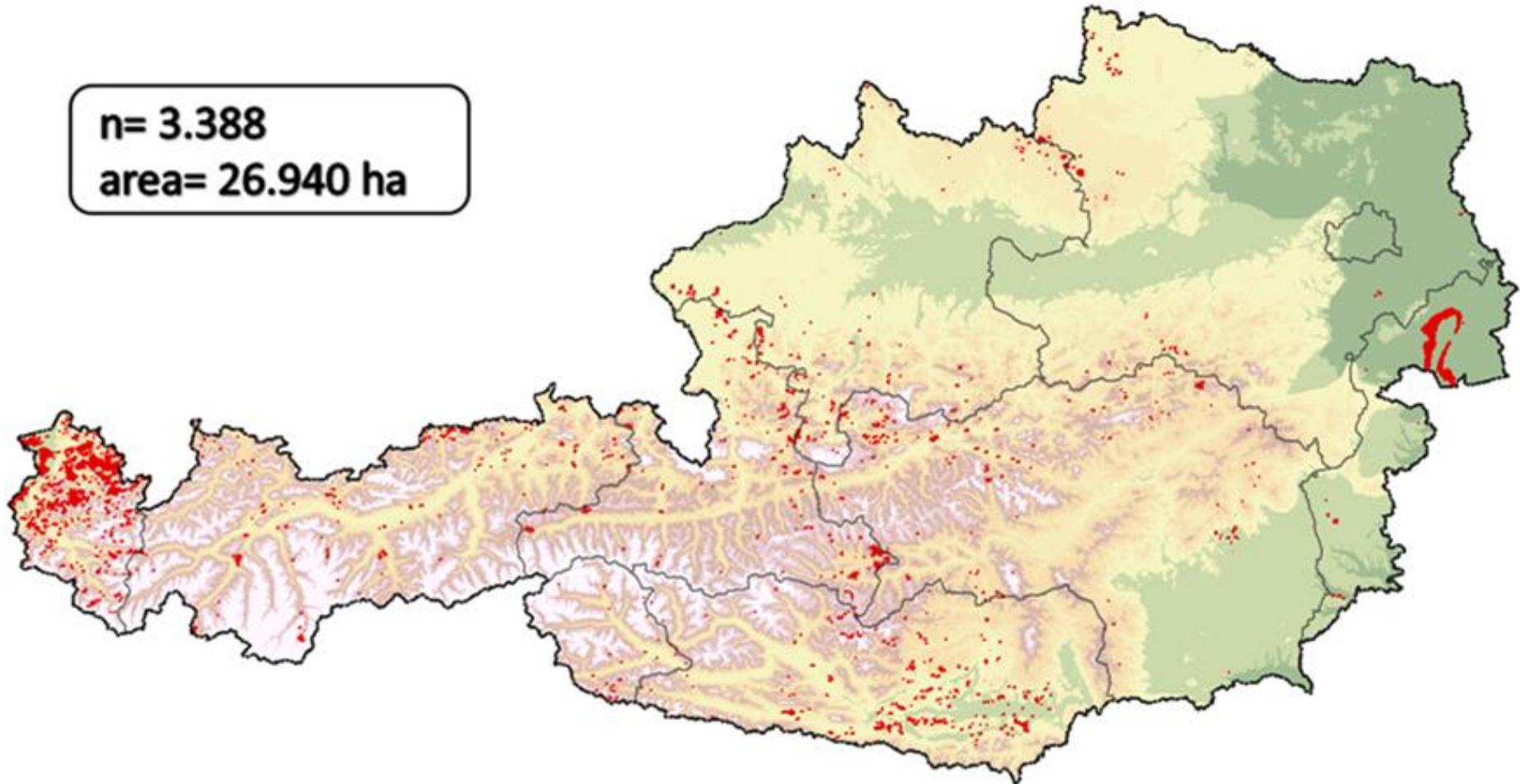
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C-storage: 100 Mio. t

CO<sub>2</sub>- Emission reduction potential when rewetting ALL Austrian  
peatlands: **0,55-4,5 Mio t CO<sub>2</sub> a<sup>-1</sup>**

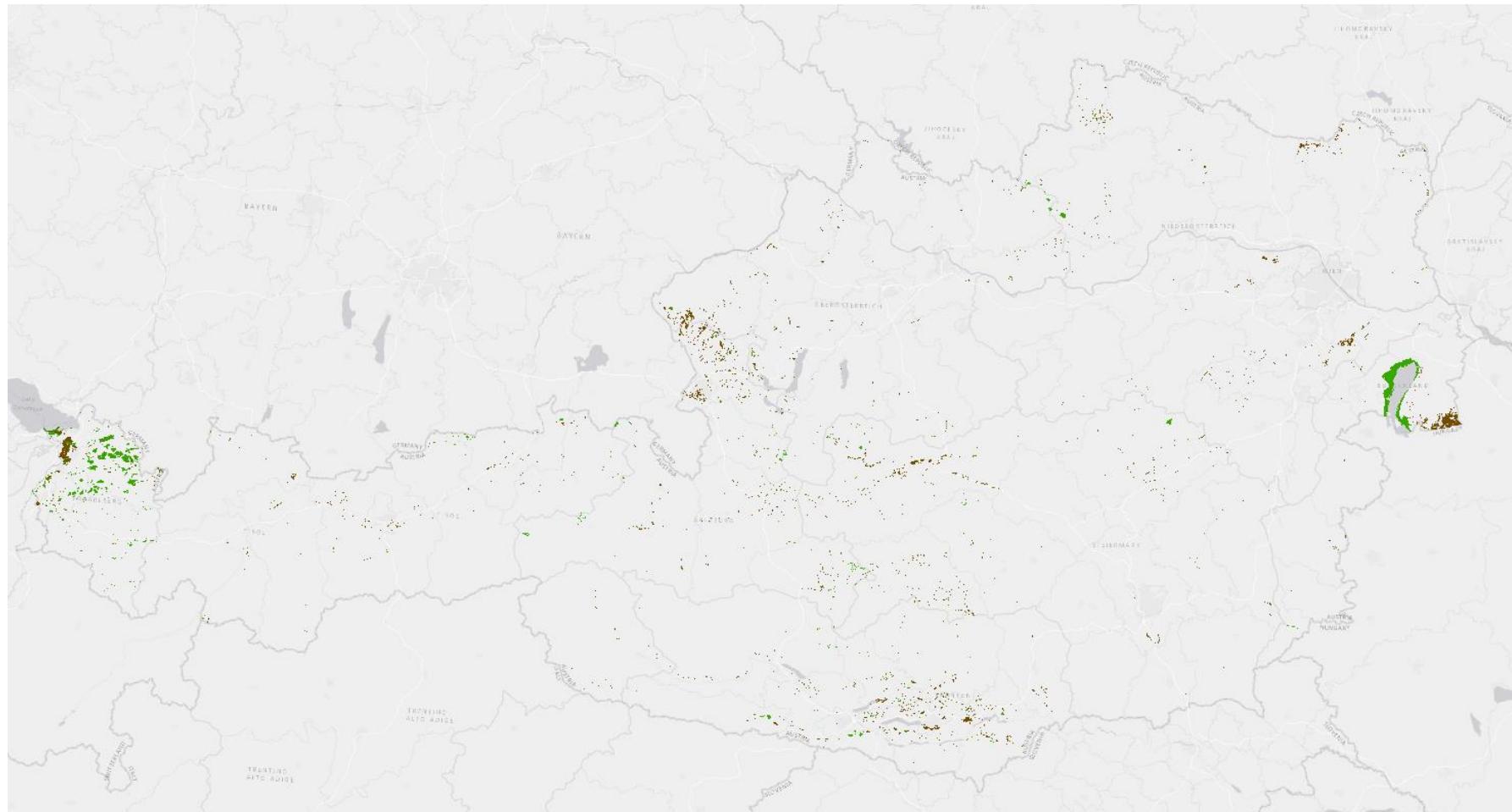
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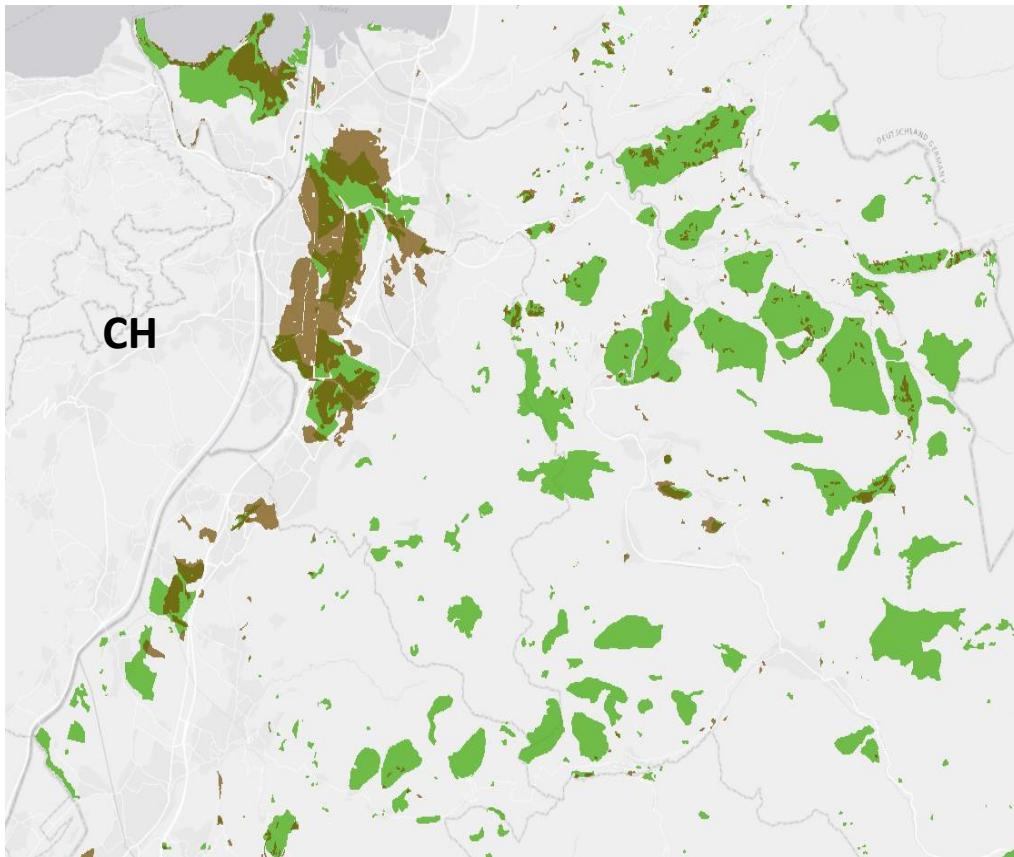
*Database Reiter & Steiner, 2013*

# Peatland **vegetation** and peat soils in Austria

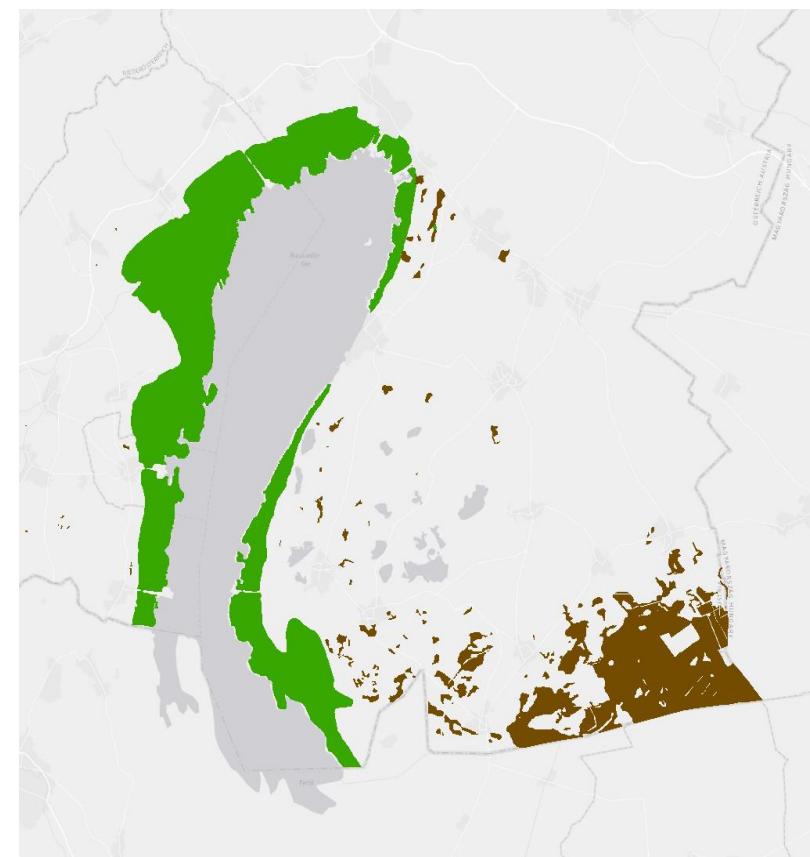


# Peatland **vegetation** and peat soils in Austria

**Vorarlberg**

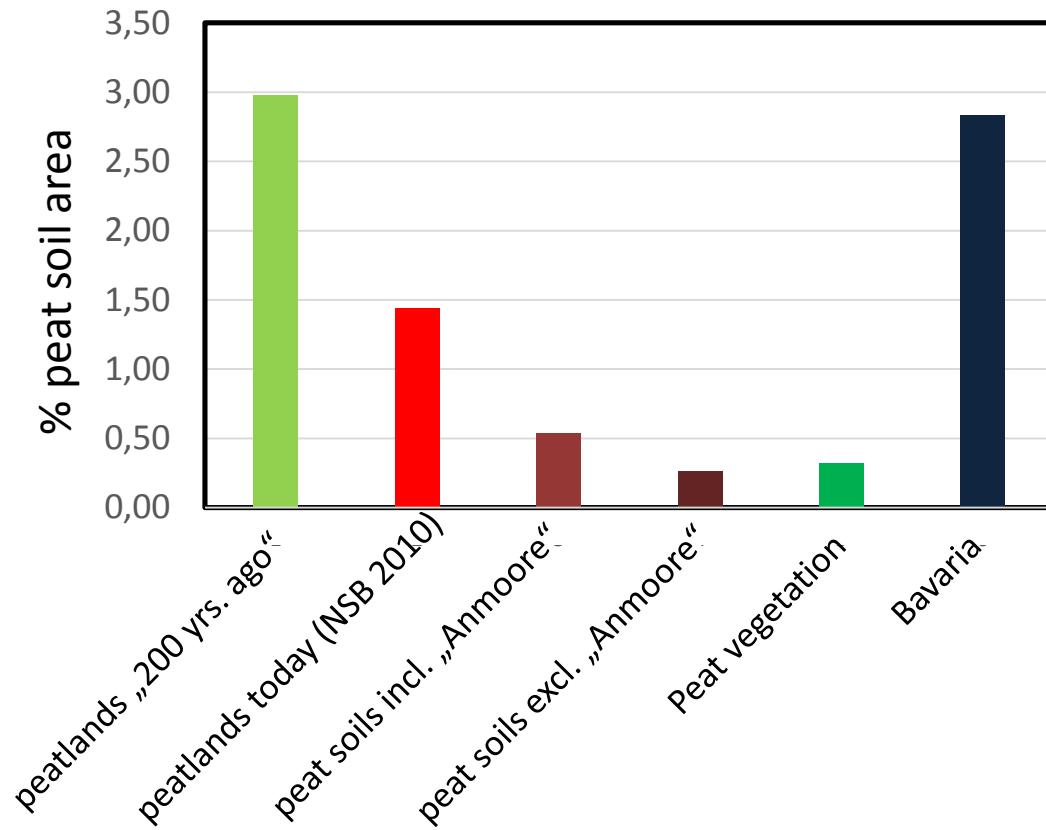


**Burgenland**



Vergleich Moore nach Vegetation (Reiter & Steiner) ->grün und Digitaler Bodenkarte ->braun (Moorböden)

# We don't know Austria's peat soil area



# We aren't reporting honestly

C-storage density ( $t C ha^{-1}$ ) of Austrian peatlands and wetlands (0-50 cm;  
[www.borisdaten.at](http://www.borisdaten.at); NIR 2014)

IPCC LU category	National LU category	Bohe-mian Massif	Inner Alps	Calcare-ous Alps	Foothills	Alpine Ridge	Source
Wetlands	Bogs	500	500	500	500	500	Expert judgement
	Surface waters and reed beds	0	0	0	0	0	Expert judgement

# We need to follow the example of Switzerland



*Patrick Gasser*

# We need to follow the example of Switzerland

Environment  
Agroscope Science | No. 26 / 2015



Agroscope good food, healthy environment

**Locating Organic Soils for the Swiss Greenhouse Gas Inventory**

Authors  
Chloé Wüst-Galley, Andreas Grünig and Jens Leifeld,  
Agroscope, Zürich

 Schweizerische Eidgenossenschaft  
Confédération suisse  
Confederazione Svizzera  
Confederaziun svizra

Federal Department of Economic Affairs,  
Education and Research EAER  
**Agroscope**

# Austrian mire protection agenda 2016-2018 (I)

- Recognition of peat soils under non-native vegetation and their role as a source of greenhouse gases
- Mapping of peat soils analogous to the recent report from Switzerland
- Coordination of mire protection activities in the federally fragmented administrative landscape
- Prioritization of mire protection activities following an ecosystem service approach
- Creation of structures for the long-term coordination of mire protection activities
- Establishing / strengthening mire research in Austria

## Austrian mire protection agenda 2016-2018 (II)

- Establishing legislation for mire protection measures in a fragmented federal system
  - Consideration of cultivated peat soils and establishment of wise use concepts
  - Tackling perverse incentives
- ➔ Comprehensive Austrian Mire Protection Strategy

# Thank you for your attention

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