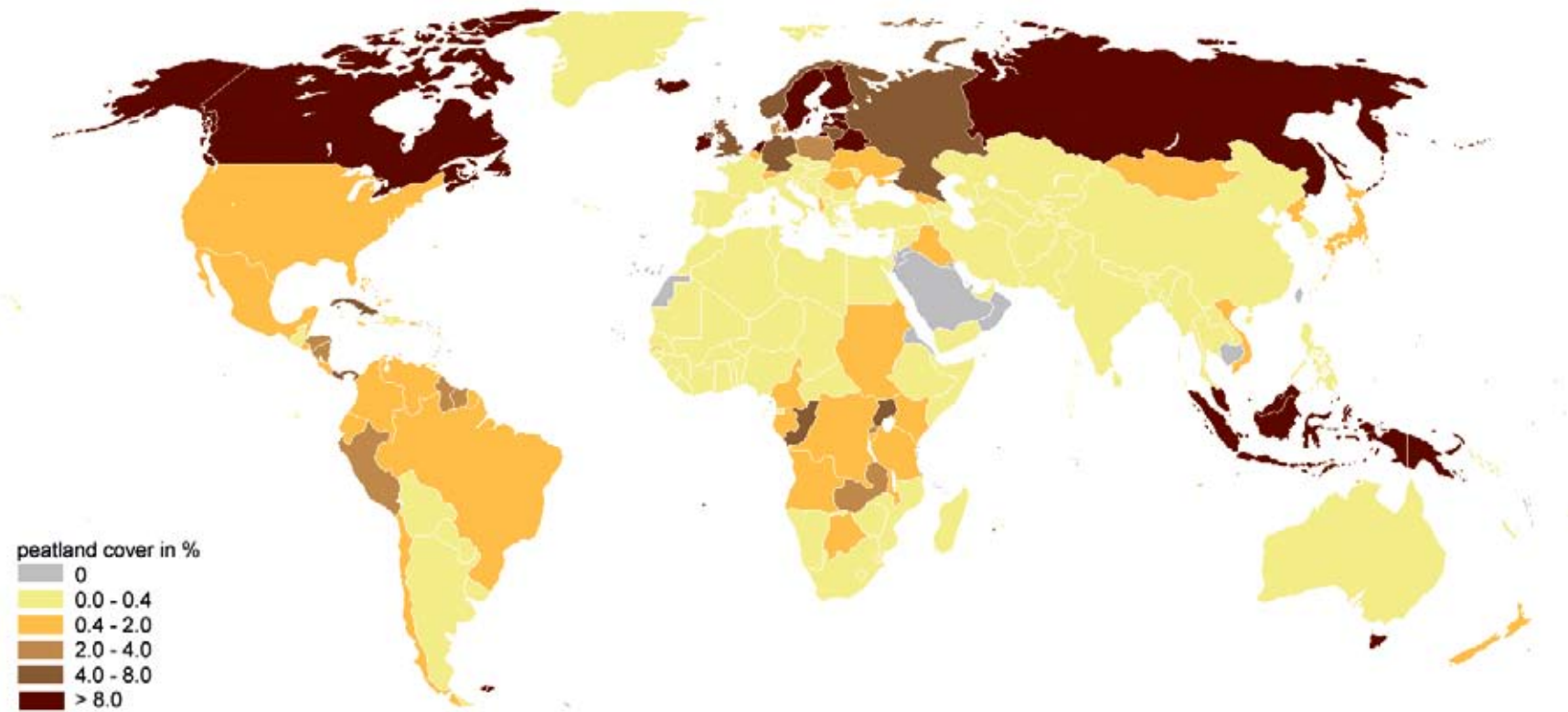


# The Global Peatland CO<sub>2</sub> Picture

Peatland status and emissions in all countries of the world

- draft -



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Peatland status and emissions in all countries  
of the world

DRAFT

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## Summary

Peatland drainage results in substantial emissions of carbon dioxide and nitrous oxide that urgently should be addressed in a post-2012 climate policy framework. The global figures presented until now do not clearly show the challenges and opportunities on regional and national levels. This report presents the first overview ever of peatland carbon data for all countries and regions of the world. This overview has been produced to facilitate the UN-FCCC climate negotiations in response to a call by countries for emission data caused by the Land Use Change and Forestry sector. For every country/area information is given on extent and status of peatlands, volume of the peat resource and on CO<sub>2</sub> emissions from different types of land use, both for the year 1990 as well as for the year 2008.

This new inventory shows that the responsibility for better peatland management for climate change mitigation is indeed global and not limited to a few selected countries. Inventory has to be improved, however, by:

- formulating clear definitions and standards for consistent inventory and reporting
- adopting a wall-to-wall peatland reporting scheme
- improved peatland mapping to cover important gaps, especially in tropical Africa, tropical South America, and South Asia.

## Introduction

Peatland drainage results in substantial emissions of carbon dioxide and nitrous oxide that should be addressed in a post-2012 climate policy framework. The global figures presented until now, however, (e.g. peat carbon pools of 550 Gtonnes C; annual emissions from degraded peatlands (including fires) of 2-3 Gigatonnes CO<sub>2</sub> per year, Parish et al. 2008) do not clearly show the challenges and opportunities on regional and national levels, as they fail to highlight the different responsibilities of the various countries:

- To secure that pristine peatlands remain untouched, preventing their enormous carbon store from being mobilized (countries with much peatland and large volumes of peat);
- To implement rewetting programmes and use this attractive opportunity for climate change mitigation (countries with degraded peatlands);
- To conserve these landscapes as special components of biodiversity and as a source of palaeo-environmental information (countries where peatlands are rare);
- And - last but not least - to be aware of their peatland resource to pursue optimal and nationally differentiated climate policies (all countries).

This report presents the first overview ever of peatland carbon data for all countries and regions of the world. The report has been produced to facilitate the UN-FCCC climate negotiations in response to a call by countries for emission data caused by the Land Use Change and Forestry sector.

## 1. Methods

### 1.1. Scope

The data presented in the following tables are a summary of the information available in the International Mire Conservation Group Global Peatland Database (IMCG-GPD [www.imcg.net/gpd/gpd.htm](http://www.imcg.net/gpd/gpd.htm)), where detailed descriptions and references for individual countries and areas can be found. The IMCG-GPD is in a continuous state of development and the data presented here are by necessity preliminary and incomplete. The absence of peatlands in Cambodia, for example, does not fit in the global picture and is probably caused by a lack of inventory. For many countries in Africa and South America there is a large uncertainty about the former and current extent of peatlands; this notably also applies to Australia.

We hope that this first world table is received as a challenge and invitation for countries to improve their peatland inventory.

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### 1.2. Coverage

The data are mainly presented for national states. Next to national states, other distinct and disjunct areas (e.g. Greenland, Spitsbergen/Svalbard, Tasmania), contested regions (e.g. Falklands/Malvinas, Jammu and Kashmir) and areas that do not belong to any country (e.g. all islands south of 60°S) are presented separately. The subdivision in 'continents' is pragmatically based on the availability of data (e.g. Papua/Irian Jaya is scheduled under Indonesia in 'Asia', whereas Papua New Guinea is allotted to 'Australasia'). For every country/area information is given on extent and status of peatlands, volume of the peat resource and on CO<sub>2</sub> emissions from different types of land use, both for the year 1990 and for the year 2008.

This overview concentrates on freshwater peatlands. Some peat accumulating or peat soil containing ecosystems are generally overlooked, because they are - erroneously - not considered to be peatlands or mires. Because of absence of information they are not sufficiently covered in this inventory. These ecosystems include

- **Mangroves:** Mangroves may form peat, comprised mainly of intertwined rootlets and soft (parenchymatous) parts of larger roots. They may furthermore collect allochthonous peat-like sediments. Peat accumulating mangroves are widely reported. In our overview we have only included them when the presence of peat was explicitly stated.
- **Salt marshes:** Outside the tropics, salt-marshes replace the mangroves. Salt-marsh peatlands with fibrous peat, consisting of the remains of plants that have grown in salt or brackish water, often mixed with considerable amounts of clay or silt, have been reported from both the east- and westcoast of North-America and from the Baltic Sea shores. Not all peat found under salt marshes has originated under salt marsh conditions. The peat may also have been formed under freshwater conditions and covered by marsh sediments after a rise in sea level.
- **Paddies:** Especially in Southeast Asia peat soils have been reclaimed for rice cultivation and consequently often classified as paddy soils, not as organic soils. Because of intensive cultivation practise the peat may rapidly disappear.

- **Paludified forests:** In paludified forests paludification and peat formation have proceeded to such an extent that the soil is covered with a layer of peat, but the trees still largely root in the mineral subsoil. Paludified forests are often excluded from peatland inventories because they are regarded as 'forests', even when the peat layer exceeds 30 cm.
- **Cloud forests and elfin woodlands:** These forests in the humid tropics receive additional humidity, other than rainfall, through the capture and/or condensation of water droplets. In cloud forests the layer of practically undecomposed organic matter ('peat') may even reach more than four metres in depth.
- **Paramos:** Paramos are tropical ecosystems that occur between the upper limit of continuous, closed-canopy forest and the upper limit of plant life, i.e. between 3000 m and 5000 m. Locally these areas are known as 'zacatonales' (Mexico, Guatemala), 'páramo' (Central and northern South America), 'jalca' (northern Peru), 'puna' (drier areas of the altiplano of the central Andes), 'afroalpine' and 'moorland' (East Africa), and 'tropical-alpine' (Malesia). Swampy cushion mires or 'turberas' are common, especially in the uppermost grass páramo.
- **Dambos:** Dambos are seasonally or permanently wet grassy valleys, depressions or seepage zones on slopes. Locally they are known as 'bas-fonds' or 'marigots' (French speaking West and Central Africa), 'inland valleys' or 'bolis' (Sierra Leone), 'fadama' (Nigeria), 'vleis' (Afrikaans), 'bani' (Shona), 'mapani', 'mbugas' (Tanzania) or 'dambos' (Eastern and Southern Africa). Dambos partly contain organic soils ('dambo peats').
- **Cryosols:** Cryosols are perennially frozen mineral and organic soils. Cryosols dominate the Arctic regions, are widespread in the Subarctic, discontinuous in Boreal areas, and sporadic in more temperate mountainous regions. Cryosols are often associated with a significant accumulation of organic matter at the surface and with cryoturbated organic matter in the subsoil.

**Submarine peatlands**, i.e. 'peat deposits on the sea floor have not been taken into consideration as our inventories only concern present-day (semi-) terrestrial areas with peat at the surface. Submarine peatlands may be formed by seagrasses or have originated from former terrestrial peatlands that have been inundated by the rising sea levels during the Lateglacial and Holocene.

### 1.3. Definitions

For global comparison, we have tried to adjust the variety of existing data to uniform standards, using the following definitions (Joosten & Clarke 2002):

**Peat** is sedentarily accumulated material consisting of at least 30% (dry mass) of dead organic material. This criterion is consistent with common definitions. In various inventories, other (mostly higher) percentages of organic material are used. Higher percentages exclude sedentates with a high proportion of clastic material or carbonates, like in flood mires (incl. mangroves and salt marshes) and calcareous spring mires.

A **peatland** is an area with a naturally accumulated peat layer at the surface. To provide a uniform standard, the data concern peatlands with a minimum peat depth of 30 cm (historically based on ploughing depth). This criterion excludes many (sub)arctic and (sub)alpine areas with a shallow peat layer. The IMCG-GPD definition largely coincides with the FAO definition of histosols with the notable exception that the FAO definition includes areas with shallow peat layers over ice or rock (see Couwenberg 2009).

A **mire** is a peatland where peat is currently being formed and accumulating. In the literature, 'peatlands' or 'mires' have often been described as purely a vegetational concept, without reference to the presence of peat. These records have not been included.

The IPCC (2006) Tier 1 guidance on monitoring changes in soil organic carbon for mineral soils addresses the stock in the upper 30 cm of the soil. Also from this perspective the 30 cm criterion is logical: Only if the peat layer is thicker than 30 cm the Tier 1 approach for mineral soils fails and default emission factors for organic soils must be used.

### 1.4. Inventory and data reliability

Peatland inventory is until now unsatisfactory and most countries have insufficient information about their peatland resource. This is related foremost to the fact that the decisive feature 'presence of peat' can not be observed directly by remote sensing. On a regional scale peatland distribution can indeed be mapped by remote sensing and limited ground truthing (because of a fair correlation between vegetation structure and peat), but over larger areas the variety of peatlands is too large (varying from forest, shrubland to reeds, open grassland and moss stretches) to assess the presence of peatland merely on the basis of surficial landscape characteristics. This also prohibits an objective estimation of uncertainty levels (as would follow from field truthing verification of remote sensing inventory). The data ranges presented in literature are thus no real reliability ranges but compilations of different estimates. For Bolivia we found, for example, reports of peatland occurrence varying from 9 km<sup>2</sup> (peatlands) to

14,256 km<sup>2</sup> (histosols). In the tables we do not present all these (often extremely dissimilar) estimates but present the most probable figure. Whereas on a regional scale peatland distribution can be mapped by remote sensing, this is impossible for peat carbon stocks. To assess peat thickness and volume we still fully rely on field peat mapping campaigns. These are for most countries not available. Even the country with the best data on peatland distribution, Finland, has only mapped a quarter of its peatland area in detail. If other data were absent and other depths were not plausible we have considered peatlands to have an average peat depth of 2 m. Overall, peat depth is estimated conservatively, which explains why the number for the total peatland carbon stock is lower than previous estimates (Kaat & Joosten 2008; Parish et al. 2008).

The data presented in the tables try to weigh up existing information from a variety of sources and to make an informed guess as to the actual situation. A consistent international overview of peatland/mire areas is complicated by the following, often interrelated, issues):

- **Typology:** Inventory and mapping of peatlands depend on interests (agriculture, forestry, peat extraction, conservation) and local classification traditions. Typologies and criteria therefore differ considerably from country to country, from discipline to discipline, from time to time and from object to object. In this first review, we have not yet succeeded in recalculating the diverse data to a uniform minimum peat depth standard of  $\geq 30$  cm. Differences in the concept of 'peat' were not considered as local inventories normally do not provide the necessary information. The different concepts of 'peat' with respect to organic matter content probably do not lead to strongly different global volumes of 'peat' and peat carbon stocks. For SE Asia peatland drainage for agriculture and for (agro-)forestry has been taken together under agriculture, because the aims cannot be clearly separated. A typological problem is also a failing standard to express volumes of extracted peat. These are generally presented in tonnes (e.g. for fuel) or in m<sup>3</sup> (for moss litter), but as the water content or the processing procedure (e.g. peat briquettes) may differ strongly, it is often unclear how the specific weight or volume in the statistics translates to carbon. The total amount of peat carbon extracted from European peatlands could not yet be established conclusively and this *considerable* source of carbon emission was thus left out of our estimates.
- **Scale:** Inventories only consider peatlands of a certain minimum extent, e.g. larger than 3, 10, or 100 ha, so that the aggregate data can not simply be compared. The FAO/UNESCO Soil Map of the World (SMW;

1: 5,000,000, 1974 - 1981) from which many older peatland distribution data in tropical countries are derived, has legend units that consist of associations of different soil types and that give no unequivocal picture of the distribution of histosols (i.e. organic or peat soils). We have used an improved interpretation of this map (Van Engelen & Huting 2002).

- **Time:** As the peatland area may change considerably in time because of mire expansion or peat oxidation/extraction, the data presented in inventories are only valid for a specific period. Drainage of peatlands leads to peat subsidence, oxidation and a decrease of the peat depth in time. When the peat layer becomes less than 30 cm thick, the area is - according to our inventory definition - no peatland anymore. For temperate peatlands an annual rate of peatland area decrease of 0.5 % can be deduced (conservatively) in case of drainage for agriculture or peat extraction. This conservative value was used to reconstruct the distribution of drained peatlands for the years 1990 and 2008 when (as in most cases) only inventory data from other years were available.
- **Changing national borders and names:** National borders have been changing considerably in the 19<sup>th</sup> and 20<sup>th</sup> century, particularly in Europe, complicating the use of older inventories. We present the data according to the present borders of the countries involved.
- **Units:** It appears that in literature the same or similar abbreviations are used for different units. MT (= metric tonnes), for example, has been confused with Mtons (Mega-tons = 1,000,000 MT), whereas Mtons has also confusingly be used to express 1,000 tons. Acres have been mixed up with hectares, hectares (cf. hm<sup>2</sup>) with km<sup>2</sup>, etc. Pseudo-exactness is introduced through recalculation of figures in the metric system. A quoted area of 2,328 ha for the Negril Morass in Jamaica, for example, gives the impression of being much more exactly assessed than the original figure of 6,000 acres.
- **Errors:** It is inevitable that calculation and printing mistakes and quotation mistakes have entered in the reporting of inventories (we will have generated some new ones...). In various cases these will have remained unnoticed, but where possible we have corrected them.
- **Error repetition:** In most literature, the facts and figures presented are copied from older literature and 'recycled' through a number of publications without checking, discussing or referring to the inventory techniques, the level of accuracy, and the (often very different) concepts used to arrive at the data. We have tried to reconstruct the 'quotation pathway' in order to arrive at the 'original' source of the data presented. In a quotation sequence the data may be expected to become less unreliable as with every consecutive citation more people (should...) have given consideration to their probability. Special attention is paid in

this respect to key publications that are often cited for peatland distribution data.

- **Confusion between geographical areas and nations:** These have been observed in data for Great Britain/United Kingdom, Japan, New Zealand, and may have occurred with countries with changing names (Congo - Zaire - Congo, Pakistan - Bangladesh), and between areas or countries with similar names (cf. the various Guyanas and Guineas).

The figures provided are best professional judgement based on a wide review of the available literature and on ample field experience in all continents and climate zones of the world.

### 1.5. Emission factors

The calculated emissions only concern emissions from biological oxidation of peat. Emissions from fire are not included. Default emission factors for CO<sub>2</sub> are derived from Couwenberg (2009) or based on interpolations and educated estimates. Only emissions from drained peatlands are included, CO<sub>2</sub> and CH<sub>4</sub> fluxes in pristine peatlands are - following the UNFCCC philosophy - not addressed.

Drained peatlands hardly emit CH<sub>4</sub>, whereas the anthropogenic CH<sub>4</sub> emissions in rewetted peatlands are assumed to be outbalanced by reduced CO<sub>2</sub> emissions. In rice fields on peat soil, CH<sub>4</sub> emissions are largely derived from young plant material, while the role of the peat soil as a substrate for CH<sub>4</sub> production is likely limited in light of the recalcitrance of tropical peat (Couwenberg et al. 2009).

Whereas they may be substantial, emissions of N<sub>2</sub>O are not accounted because good proxies are lacking for the rather erratic fluxes that largely depend on amount and timing of fertilizer application.

Table 1: Default values used for CO<sub>2</sub> emissions from drained peat soils (in t CO<sub>2</sub> ha<sup>-1</sup> yr<sup>-1</sup>).

	<b>Forest land / Agroforestry</b>	<b>Cropland</b>	<b>Grassland</b>	<b>Extraction sites</b>
<b>Tropical</b>	<b>40</b>	<b>40</b>	<b>40</b>	<b>30</b>
<b>Subtropical</b>	<i>30</i>	<i>35</i>	<i>30</i>	<i>25</i>
<b>Temperate</b>	<i>20</i>	<i>25</i>	<b>20</b>	<i>15</i>
<b>Boreal</b>	<b>7</b>	<b>25</b>	<b>10</b>	<b>10</b>

**Bold:** Figures derived from Couwenberg (2009)\*, *italics:* interpolated

\* This paper evaluates IPCC approaches to GHG emissions from managed organic (peat soils) and concludes with a summary table comparing IPCC 2006 default values with best estimates based on recent literature.

## 2. Some results

The wealth of information in the tables has not yet been exploited. Exemplarily we present a new table of the countries/areas with the largest peatland occurrences (table 2). This table confirms the findings of earlier overviews that Russia, Canada, Indonesia and USA are leading.

Table 2: The countries/areas with the actual largest peatland occurrences.

Country/area	Peat area (km <sup>2</sup> )
Russia – Asian part	1 176 280
Canada	1 133 926
Indonesia	265 500
Russia – European part	199 410
USA (Alaska)	131 990
USA (lower 48)	91 819
Finland	79 429
Sweden	65 623
Papua New Guinea	59 922
Brazil	54 730
Peru	49 991
China	33 499
Sudan	29 910
Norway	29 685
Malaysia	26 685
Mongolia	26 291
Belarus	22 352
United Kingdom	17 113
Germany	16 668
Congo	15 999
Zambia	15 410
Uganda	13 640
Iceland	13 366
DR Congo	11 955
Poland	11 528
Falklands - Malvinas	11 510
Ireland	11 090
Chile	10 996

Below table shows that various sub-Antarctic isles have the worldwide largest proportion of peatlands.

Table 3: The countries/areas with the actual largest peatland proportion (% of total land area area).

Country/area	Peatland (proportion %)
Falklands / Malvinas	94.6
Antipodes	81.8
Campbell Islands	70.4
Auckland Islands	70.2
St Helena	53.3
Amsterdam & St-Paul Islands	48.4
Macquarie Island	46.9
Chatham Islands	46.7
Finland	23.5
Singapore	21.2
Estonia	20.9
Brunei	17.2
St Helena (UK)	17.0
Ireland	15.8
Sweden	14.6
Tasmania	14.5
Indonesia	13.9
Iceland	13.0
Papua New Guinea	12.9
Canada	11.4
Belarus	10.8
Latvia	10.0
USA (Alaska)	8.7
Russia – Asian part	8.7
Netherlands	8.3
Malaysia	8.1
Norway	7.7
Trindade Island (Brazil)	7.1



For a whole series of countries/areas the occurrence of peatlands could not (yet) be confirmed. Table 4 presents an overview of countries/areas from which peatlands are known, but where they are extremely rare and deserve further research and conservation.

Table 4: The countries/areas with the smallest known peatland occurrences (as percentage of their area).

Country/area	Peatland (proportion %)
Yemen	0.0002
Algeria	0.0004
Greenland	0.0005
Tajikistan	0.0007
Chad	0.0007
Egypt	0.0010
United Arab Emirates	0.0011
Tunisia	0.0012
Syria	0.0015
Kazakhstan	0.0018
Morocco	0.0021
Bhutan	0.0021
Mauritius	0.0024
Haiti	0.0033
Croatia	0.0034
South Shetland Islands	0.0043
South Korea	0.0047
New Caledonia and Dep.	0.0052
Mauritania	0.0056
Libya	0.0056
Niger	0.0060
Nepal	0.0065
Lebanon	0.0087
Bolivia	0.0090
Cyprus	0.0108
Spain	0.0112
Namibia	0.0120
Australia (excl. Tasmania)	0.0121
Galápagos Islands	0.0127
Turkey	0.0154

The 'top-emitters' (table 5) include SE Asia, Central and Eastern Europe, and the USA (lower 48). Big emitters that until now were less apparent are China and Mongolia, where recently enormous peatland degradation is taking place.

Table 5: The countries/areas with the actual largest total emissions from degrading peat in 2008.

Country/area	Emissions from degrading peat 2008 Mton CO <sub>2</sub> /a
Indonesia	500
Russia European part	139
China	66
USA (lower 48)	67
Finland	50
Malaysia	48
Mongolia	45
Belarus	45
Germany	34
Poland	24
Russia Asian part	22
Uganda	20
Papua New Guinea	20
Iceland	18
Ireland	16
Sweden	15
Estonia	14
Brazil	12
United Kingdom	11
Lithuania	6
Netherlands	6
Norway	6
Vietnam	5
Ukraine	5
Zambia	5
Japan	5
Latvia	4
New Zealand	4

Table 6: The countries/areas with the actual largest peat carbon stocks (Mton C) 2008.

Country	Peat carbon stock 2008 (Mton C)
Canada	154 984
Russia Asian part	117 607
Indonesia	54 016
Russia European part	19 948
USA (Alaska)	15 499
USA (lower 48)	13 668
Papua New Guinea	5 983
Brazil	5 440
Malaysia	5 431
Finland	5 294
Sweden	5 000
China	3 224
Norway	2 230
Germany	2 018
Venezuela	1 984
Sudan	1 980
United Kingdom	1 745
Congo	1 600
Mexico	1 483
Uganda	1 321
Belarus	1 305
Dem. Republic of the Congo	1 190
Falkland Islands / Islas Malvinas	1 151
Ireland	1 130
Chile	1 124
Colombia	1 000
Peru	998
Angola	980

Previous estimates of global peatland area (~4 million km<sup>2</sup>; Kaat & Joosten 2008) correspond well with the present country-wise data (often based on conservative estimates). The carbon stock estimate is likely too low following our conservative approach. Total emissions of 1.3 Gt do not include the considerable source of emission caused by peat extraction in Europe, nor the emissions from peat fires, regularly occurring in Indonesia, Russia, Belarus and other countries. Including these sources, emissions will amount to at least 2 Gt.

### 3. Some conclusions

This new inventory shows that the responsibility for better peatland management for climate change mitigation is indeed global and not limited to a few selected countries.

Inventory has to be improved by

- formulating clear definitions and standards for consistent inventory and reporting
- adopting a wall-to-wall peatland reporting scheme to avoid that important peatland areas fall outside the reporting (e.g. abandoned agricultural and extraction sites when shifting from one land use category to the other, as often happens in Europe)
- global peatland mapping to cover important gaps, especially in tropical Africa, tropical South America, and South Asia.

### 4. Acknowledgements

The data presented in this overview have been gathered by a wide range of persons of which especially the contributions of graduates and postgraduates of Greifswald University and the members of the International Mire Conservation Group have to be acknowledged.

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## Tables

# Country list of CO<sub>2</sub> emissions from degraded peatlands AFRICA

1990

Country/area	Area of country /area	Peatland area 1990	Peat carbon stock 1990	Forested peatland area 1990	Emissions from 1990 peatland drained for agriculture before 1990	Emissions in 1990 from peatland drained for forestry before 1990	Emissions in 1990 from peatland drained for peat extraction before 1990	Emissions in 1990 from peatland drained for other purposes before 1990	Emissions in 1990 from peat from non-forested peatland	Total degrading peatland area in 1990	Emissions from peat extracted in 1990	Total emissions in 1990 from degrading peat
	km <sup>2</sup>	km <sup>2</sup>	Mton C	km <sup>2</sup>	Mton CO <sub>2</sub> /a	Mton CO <sub>2</sub> /a	Mton CO <sub>2</sub> /a	Mton CO <sub>2</sub> /a	Mton CO <sub>2</sub> /a	km <sup>2</sup>	Mton CO <sub>2</sub> /a	Mton CO <sub>2</sub> /a
<b>AFRICA</b>												
Algeria	2.381.741	10	1	0	0,01	0	0	0	0,01	2	0	<b>0,01</b>
Angola	1.246.700	10.000	1.000	9.000	4	0	0,02	0	4,0	1.005	0,04	<b>4,1</b>
Benin	112.622	100	10	10	0,2	0	0	0	0,2	50	0	<b>0,2</b>
Botswana	581.730	3.000	300	0	0,4	0	0	0	0,4	100	0	<b>0,4</b>
Burkina Faso	274.200	150	15	50	0,2	0	0	0	0,2	50	0	<b>0,2</b>
Burundi	27.834	150	70	10	0,06	0	0,01	0	0,1	17	0,02	<b>0,1</b>
Cameroon	475.442	4.000	400	3.900	0,4	0	0	0	0,4	100	0	<b>0,4</b>
Canary Islands	7.273	0	0	0	0	0	0	0	0	0	0	<b>0</b>
Cape Verde	4.033	0	0	0	0	0	0	0	0	0	0	<b>0</b>
Central African Republic	622.436	100	10	50	0,04	0	0	0	0,04	10	0	<b>0,04</b>
Ceuta	28	0	0	0	0	0	0	0	0	0	0	<b>0</b>
Chad	1.284.000	10	1	0	0,02	0	0	0	0,02	5	0	<b>0,02</b>
Comoros	1.862	0	0	0	0	0	0	0	0	0	0	<b>0</b>
Congo	342.000	16.000	1.600	12.000	0,04	0	0	0	0,04	10	0	<b>0,04</b>
Dem. Republic of the Congo	2.344.885	12.000	1.200	10.000	2	0	0	0	2	500	0	<b>2</b>
Djibouti	23.200	55	6	40	0,06	0	0	0	0,06	15	0	<b>0,06</b>
Egypt	997.739	10	1	0	0,02	0	0	0	0,02	5	0	<b>0,02</b>
Equatorial Guinea	28.051	8	1	6	0,01	0	0	0	0,01	2	0	<b>0,01</b>
Eritrea	121.144	0	0	0	0	0	0	0	0	0	0	<b>0</b>
Ethiopia	1.133.380	2.200	220	100	0,35	0	0	0	0,4	100	0	<b>0,4</b>
Gabon	267.667	2.000	200	1.900	0,04	0	0	0	0,04	10	0	<b>0,04</b>
Ghana	238.500	100	10	50	0,08	0	0	0	0,08	20	0	<b>0,1</b>
Guinea	245.857	1.000	50	500	2	0	0	0	2	500	0	<b>2</b>
Guinea-Bissau	36.125	15	2	10	0,02	0	0	0	0,02	5	0	<b>0,02</b>
Ivory Coast	322.462	700	70	350	1	0	0	0	1	250	0	<b>1</b>
Kenya	582.646	5.000	500	2.000	2	0	0	0	2	500	0	<b>2</b>
Lesotho	30.355	20	2	0	0,05	0	0	0	0,05	13	0	<b>0,05</b>
Liberia	99.067	100	3	50	0,12	0	0,003	0	0,1	31	0,0004	<b>0,1</b>
Libya	1.757.000	100	5	0	0,04	0	0	0	0,04	10	0	<b>0,04</b>
Madagascar	587.041	1.900	190	900	2	0	0,03	0	2,0	510	0	<b>2,0</b>



# Country list of CO<sub>2</sub> emissions from degraded peatlands AFRICA

1990

Country/area	Area of country /area	Peatland area 1990	Peat carbon stock 1990	Forested peatland area 1990	Emissions from 1990 peatland drained for agriculture before 1990	Emissions in 1990 from 1990 peatland drained for forestry before 1990	Emissions in 1990 from 1990 peatland drained for peat extraction before 1990	Emissions in 1990 from 1990 peatland drained for other purposes before 1990	Emissions in 1990 from peat from non-forested peatland	Total degrading peatland area in 1990	Emissions from peat extracted in 1990	Total emissions in 1990 from degrading peat
	km <sup>2</sup>	km <sup>2</sup>	Mton C	km <sup>2</sup>	Mton CO <sub>2</sub> /a	Mton CO <sub>2</sub> /a	Mton CO <sub>2</sub> /a	Mton CO <sub>2</sub> /a	Mton CO <sub>2</sub> /a	km <sup>2</sup>	Mton CO <sub>2</sub> /a	Mton CO <sub>2</sub> /a
<b>AFRICA (ctd)</b>												
Madeiras (Portugal)	794	0	0	0	0	0	0	0	0	0	0	0
Malawi	118.484	700	70	100	1,2	0	0	0	1,2	300	0	1,2
Mali	1.240.192	400	40	50	0,2	0	0	0	0,2	50	0	0,2
Mauritania	1.031.000	60	6	20	0,12	0	0	0	0,12	30	0,0004	0,12
Mauritius	2.040	0,05	0,01	0,02	0,0001	0	0	0	0,0001	0,02	0	0,0001
Melilla	12	0	0	0	0	0	0	0	0	0	0	0
Morocco	453.730	10	1	0	0,02	0	0	0	0,02	5	0	0,02
Mozambique	799.380	2.000	200	1000	3	0	0	0	3	750	0	3
Namibia	824.269	100	10	0	0,04	0	0	0	0,04	10	0	0,04
Niger	1.267.000	76	2	0	0	0	0	0	0	0	0	0
Nigeria	923.768	1.100	110	900	0,8	0	0	0,04	0,84	210	0	0,84
Réunion	2.512	120	9	50	0,08	0	0	0	0,08	20	0	0,08
Rwanda	26.338	800	120	10	0,4	0	0,01	0	0,41	104	0,03	0,44
São Tomé and Príncipe	1.001	2	0	0	0,004	0	0	0	0,004	1	0	0,004
Senegal	196.722	55	14	45	0,02	0	0,0003	0	0,02	6,1	0,04	0,06
Sierra Leone	71.740	100	5	50	0,12	0	0,003	0	0,12	31	0,0004	0,12
Somalia	637.700	200	20	10	0,2	0	0	0	0,2	50	0	0,2
South Africa	1.219.090	300	60	100	0,2	0	0,003	0	0,20	51	0,02	0,22
St Helena (UK)	324	55	6	0	0	0	0	0	0	0	0	0
Sudan	2.505.800	30.000	2.000	0	4	0	0	0	4	1.000	0	4
Swaziland	17.363	50	5	0	0,12	0	0	0	0,12	30	0	0,12
Tanzania	945.100	4.500	250	500	0,32	0	0	0	0,32	80	0	0,32
The Gambia	11.295	50	1	30	0,08	0	0	0	0,08	20	0	0,08
Togo	56.785	30	3	5	0,04	0	0	0	0,04	10	0	0,04
Tunisia	164.418	2	0,2	0	0,004	0	0	0	0,004	1	0	0,004
Western Sahara	252.120	0	0	0				0	0	0	0	0
Uganda	241.138	14.000	1.400	1.500	16	0	0	0	16	4.000	0	16
Zambia	752.614	15.500	800	1.000	4	0	0	0	4	1.000	0	4
Zimbabwe	390.759	350	20	50	0,8	0	0	0	0,8	200	0	0,8
<b>AFRICA TOTAL</b>	<b>30.332.498</b>	<b>129.288</b>	<b>11.018</b>	<b>46.346</b>	<b>47</b>	<b>0</b>	<b>0,1</b>	<b>0</b>	<b>47</b>	<b>11.779</b>	<b>0</b>	<b>47,2</b>



**INTERNATIONAL MIRE  
CONSERVATION GROUP**

**ERNST MORITZ ARNDT  
UNIVERSITÄT GREIFSWALD**



Wissen  
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Seit 1456



## 2008

Peatland area 2008	Peat carbon stock 2008	Forested peatland area 2008	Emissions in 2008 from 2008 peatland drained for agriculture before 2008	Emissions in 2008 from 2008 peatland drained for forestry before 2008	Emissions in 2008 from 2008 peatland drained for peat extraction before 2008	Emissions in 2008 from 2008 peatland drained for other purposes before 2008	Emissions from peat from non-forested peatland 2008	Total degrading peatland area 2008	Emissions from peat extracted in 2008	<b>Total emissions from degrading peat 2008</b>	Total technically possible future emissions	<b>Country/area</b>
km <sup>2</sup>	Mton C	km <sup>2</sup>	Mton CO <sub>2</sub> /a	Mton CO <sub>2</sub> /a	Mton CO <sub>2</sub> /a	Mton CO <sub>2</sub> /a	Mton CO <sub>2</sub> /a	km <sup>2</sup>	Mton CO <sub>2</sub> /a	Mton CO <sub>2</sub> /a	Mton CO <sub>2</sub>	<b>AFRICA (ctd)</b>
0	0	0	0	0	0	0	0	0	0	0	0	Madeiras (Portugal)
673	64	100	1,2	0	0	0	1,2	300	0	1,2	211	Malawi
396	39	50	0,2	0	0	0	0,2	50	0	0,2	129	Mali
57	5	20	0,12	0	0,003	0	0,1	31	0,0007	0,1	18	Mauritania
0	0	0,02	0,0001	0	0	0	0,0001	0,02	0	0,0001	0,02	Mauritius
0	0	0	0	0	0	0	0	0	0	0	0	Melilla
10	1	0	0,0175	0	0	0	0,02	5	0	0,02	3	Morocco
1933	185	900	3,2	0	0	0	3,2	800	0	3,2	610	Mozambique
99	10	0	0,04	0	0	0	0,04	10	0	0,04	32	Namibia
76	2	0	0,04	0	0	0	0,04	10	0	0,04	7	Niger
1081	106	800	1,2	0	0	0	1,2	300	0	1,2	349	Nigeria
118	9	50	0,08	0	0	0	0,1	20	0	0,1	28	Réunion
791	118	10	0,8	0	0,02	0	0,8	205	0,03	0,84	388	Rwanda
2	0,2	0	0,004	0	0	0	0,004	1	0	0,004	1	São Tomé and Príncipe
54	14	45	0,028	0	0,003	0	0,03	8	0,04	0,07	46	Senegal
97	4	40	0,16	0	0,003	0	0,16	41	0,0004	0,16	14	Sierra Leone
196	19	10	0,2	0	0	0	0,2	50	0	0,2	63	Somalia
295	59	90	0,28	0	0,003	0	0,28	71	0,04	0,32	194	South Africa
55	6	0	0	0	0	0	0	0	0	0	18	St Helena (UK)
29910	1980	0	4	0	0	0	4	1000	0	4	6.523	Sudan
47	4	0	0,14	0	0	0	0,14	35	0	0,14	15	Swaziland
4493	248	500	0,36	0	0	0	0,36	90	0	0,36	818	Tanzania
48	0,6	30	0,08	0	0	0	0,08	20	0	0,08	2	The Gambia
29	2,80	5	0,08	0	0	0	0,08	20	0	0,08	9	Togo
2	0,2	0	0,004	0	0	0	0,004	1	0	0,004	0,6	Tunisia
0	0	0	0	0	0	0	0	0	0	0	0	Western Sahara
13640	1321	1.400	20	0	0	0	20	5000	0	20	4.352	Uganda
15410	780	1.000	4,8	0	0	0	4,8	1200	0	4,8	2.570	Zambia
332	16	50	1	0	0	0	1	250	0	1	53	Zimbabwe
<b>130.181</b>	<b>10.786</b>	<b>45.805</b>	<b>56</b>	<b>0</b>	<b>0,1</b>	<b>0</b>	<b>56</b>	<b>14.215</b>	<b>0,1</b>	<b>56,9</b>	<b>35.529</b>	<b>AFRICA TOTAL</b>



# Country list of CO<sub>2</sub> emissions from degraded peatlands AMERICA

1990

Country/area	Area of country /area	Peatland area 1990	Peat carbon stock 1990	Forested peatland area 1990	Emissions from 1990 peatland drained for agriculture before 1990	Emissions in 1990 from 1990 peatland drained for forestry before 1990	Emissions in 1990 from 1990 peatland drained for peat extraction before 1990	Emissions in 1990 from 1990 peatland drained for other purposes before 1990	Emissions in 1990 from peat from non-forested peatland	Total degrading peatland area in 1990	Emissions from peat extracted in 1990	Total emissions in 1990 from degrading peat
	km <sup>2</sup>	km <sup>2</sup>	Mton C	km <sup>2</sup>	Mton CO <sub>2</sub> /a	Mton CO <sub>2</sub> /a	Mton CO <sub>2</sub> /a	Mton CO <sub>2</sub> /a	Mton CO <sub>2</sub> /a	km <sup>2</sup>	Mton CO <sub>2</sub> /a	Mton CO <sub>2</sub> /a
<b>AMERICA</b>												
Antigua and Barbuda	442	0	0	0	0	0	0	0	0	0	0	0
Anguilla	96	0	0	0	0	0	0	0	0	0	0	0
Argentina	2.780.400	2.400	240	0	0,03	0	0,01	0,01	0,05	18	0,002	0,05
Aruba	193	0	0	0	0	0	0	0	0	0	0	0
Bahamas	13.939	90	9	40	0,12	0	0	0	0,12	30	0	0,12
Barbados	430	0	0	0	0	0	0	0	0	0	0	0
Belize	22.965	250	50	240	0,04	0	0	0	0,04	10	0	0,04
Bermudas	53	1	0	1	0,004	0	0	0	0,004	1	0	0,004
Bolivia	1.098.581	100	10	10	0,04	0	0,02	0	0,055	15	0	0,05
Brazil	8.547.404	55.000	5.500	50.000	12	0	0,01	0	12	3.003	0,10	12,1
British Virgin Islands	153	0	0	0	0	0	0	0	0	0	0	0
Canada	9.970.610	1.134.000	155.000	159.000	3,5	0,2	0,16	0	3,7	1820	1,1	4,9
Cayman Islands	262	3	0,3	2	0,004	0	0	0	0,004	1	0	0,004
Chile	756.626	11.000	1.125	0	0,09	0	0,03	0	0,12	40	0,01	0,12
Colombia	1.141.748	10.000	1.000	9.000	0,04	0	0,02	0	0,06	15	0,004	0,06
Costa Rica	51.060	350	35	300	0,04	0	0	0	0,04	10	0	0,04
Cuba	114.525	6.500	650	2.000	1,12	1,6	0	0,02	1,1	686	0	2,7
Dominica	750	1	0,1	1	0,004	0	0	0	0,004	1	0	0,004
Dominican Republic	48.400	10	1	5	0,004	0	0	0	0,004	1	0	0,004
Ecuador	272.045	5.000	500	3.000	0,4	0	0	0	0,4	100	0	0,4
El Salvador	21.041	90	9	50	0,08	0	0	0	0,08	20	0	0,08
French Guiana	91.000	1.600	160	1.500	0,04	0	0	0	0,04	10	0	0,04
Greenland	2.175.600	10	1	0	0	0	0	0	0	0	0	0
Grenada	344	0	0	0	0	0	0	0	0	0	0	0
Guadeloupe (France)	1.780	10	1	7	0,004	0	0	0	0,004	1	0	0,004
Guatemala	108.889	200	20	180	0,04	0	0	0	0,04	10	0	0,04
Guyana	214.969	8.000	800	7.000	4	0	0	0	4	1.000	0	4
Haiti	27.750	1	0	0	0,004	0	0	0	0,004	1	0	0,004
Honduras	112.492	2.900	600	2.600	1,2	0	0	0	1,2	300	0	1,2
Jamaica	10.991	100	20	30	0,08	0	0	0	0,08	20	0	0,08



# Country list of CO<sub>2</sub> emissions from degraded peatlands AMERICA

1990

Country/area	Area of country /area	Peatland area 1990	Peat carbon stock 1990	Forested peatland area 1990	Emissions from 1990 peatland drained for agriculture before 1990	Emissions in 1990 from 1990 peatland drained for forestry before 1990	Emissions in 1990 from 1990 peatland drained for peat extraction before 1990	Emissions in 1990 from 1990 peatland drained for other purposes before 1990	Emissions in 1990 from peat from non-forested peatland	Total degrading peatland area in 1990	Emissions from peat extracted in 1990	Total emissions in 1990 from degrading peat
	km <sup>2</sup>	km <sup>2</sup>	Mton C	km <sup>2</sup>	Mton CO <sub>2</sub> /a	Mton CO <sub>2</sub> /a	Mton CO <sub>2</sub> /a	Mton CO <sub>2</sub> /a	Mton CO <sub>2</sub> /a	km <sup>2</sup>	Mton CO <sub>2</sub> /a	Mton CO <sub>2</sub> /a
<b>AMERICA (ctd)</b>	km <sup>2</sup>	km <sup>2</sup>	Mton C	km <sup>2</sup>	Mton CO <sub>2</sub> /a	Mton CO <sub>2</sub> /a	Mton CO <sub>2</sub> /a	Mton CO <sub>2</sub> /a	Mton CO <sub>2</sub> /a	km <sup>2</sup>	Mton CO <sub>2</sub> /a	Mton CO <sub>2</sub> /a
Martinique	1.102	1	0,100	1	0,004	0	0	0	0,004	1	0	0,004
Mexico	1.964.382	10.000	1.500	3.000	3,5	0	0	0	3,5	1.000	0	3,5
Montserrat	102	0	0	0	0	0	0	0	0	0	0	0
Netherlands Antilles	800	0	0	0	0	0	0	0	0	0	0	0
Nicaragua	129.494	3.700	370	2.000	0,4	0	0	0	0,4	100	0	0,4
Panama	75.517	3.300	330	3.000	0,4	0	0	0	0,4	100	0	0,4
Paraguay	406.752	100	10	50	0,08	0	0	0	0,08	20	0	0,08
Peru	1.280.000	50.000	1.000	40.000	0,4	0	0	0	0,4	100	0	0,4
Puerto Rico	9.104	100	10	50	0,08	0	0	0	0,08	20	0	0,08
St Kitts and Nevis	269	0	0	0	0	0	0	0	0	0	0	0
St Lucia	616	0	0	0	0	0	0	0	0	0	0	0
St Vincent and the Grenadines	389	0	0	0	0	0	0	0	0	0	0	0
Suriname	163.265	6.000	600	5.000	0,4	0	0	0	0,4	100	0	0,4
Trindade Island (Brazil)	14	1	0,1	0	0	0	0	0	0	0	0	0
Trinidad and Tobago	5.128	10	1	5	0,004	0	0	0	0,004	1	0	0,004
Turks and Caicos Islands	430	0	0	0	0	0	0	0	0	0	0	0
United States of America (Alaska)	1.518.800	132.000	15.500	70.000	0,1	0	0,01	0	0,11	109	0,1098	0,2
United States of America (lower 48)	9.629.047	93.000	14.000	30.000	32,5	0	0,3	0	32,8	13.120	1,464	67
Uruguay	176.215	600	60	10	0,4	0	0,003	0	0,4	101	0	0,4
Venezuela	912.050	8.000	2.000	5.000	1,6	1,6	0,003	0	1,6	801	0,0732	3,3
<b>AMERICA TOTAL</b>	<b>43.861.004</b>	<b>1.544.428</b>	<b>201.113</b>	<b>393082</b>	<b>62,77</b>	<b>3</b>	<b>0,6</b>	<b>0</b>	<b>63</b>	<b>22.686</b>	<b>3</b>	<b>103</b>

## 2008

Peatland area 2008	Peat carbon stock 2008	Forested peatland area 2008	Emissions in 2008 from 2008 peatland drained for agriculture before 2008	Emissions in 2008 from 2008 peatland drained for forestry before 2008	Emissions in 2008 from 2008 peatland drained for peat extraction before 2008	Emissions in 2008 from 2008 peatland drained for other purposes before 2008	Emissions from peat from non-forested peatland 2008	Total degrading peatland area 2008	Emissions from peat extracted in 2008	Total emissions from degrading peat 2008	Total technically possible future emissions	Country/area
km <sup>2</sup>	Mton C	km <sup>2</sup>	Mton CO <sub>2</sub> /a	Mton CO <sub>2</sub> /a	Mton CO <sub>2</sub> /a	Mton CO <sub>2</sub> /a	Mton CO <sub>2</sub> /a	km <sup>2</sup>	Mton CO <sub>2</sub> /a	Mton CO <sub>2</sub> /a	Mton CO <sub>2</sub>	
0,91	0,080	0	0,004	0	0	0	0,004	1	0	<b>0,004</b>	0,3	<b>AMERICA (ctd)</b>
9.910	1483	3.000	3,5	0	0	0	3,5	1000	0	<b>3,5</b>	4884	Martinique
0	0	0	0	0	0	0	0	0	0	<b>0</b>	0	Mexico
0	0	0	0	0	0	0	0	0	0	<b>0</b>	0	Montserrat
3.691	368	2.000	0,4	0	0	0	0,4	100	0	<b>0,4</b>	1212	Netherlands Antilles
3.291	328	3.000	0,4	0	0	0	0,4	100	0	<b>0,4</b>	1081	Nicaragua
98,2	10	50	0,08	0	0	0	0,08	20	0	<b>0,08</b>	32	Panama
49.991	998	40.000	0,4	0	0	0	0,4	100	0	<b>0,4</b>	3288	Paraguay
98,2	10	50	0,08	0	0	0	0,08	20	0	<b>0,08</b>	32	Peru
0	0	0	0	0	0	0	0	0	0	<b>0</b>	0	Puerto Rico
0	0	0	0	0	0	0	0	0	0	<b>0</b>	0	St Kitts and Nevis
0	0	0	0	0	0	0	0	0	0	<b>0</b>	0	St Lucia
5.991	598	5.000	0,4	0	0	0	0,4	100	0	<b>0,4</b>	1970	St Vincent and the Grenadines
1	0,100	0	0	0	0	0	0	0	0	<b>0</b>	0,3	Suriname
9,91	1	5	0,01	0	0	0	0,01	2	0	<b>0,01</b>	3	Trinidad and Tobago
0	0	0	0	0	0	0	0	0	0	<b>0</b>	0	Turks and Caicos Islands
131.990	15499	70.000	0,1	0	0,01	0	0,11	110	0,1	<b>0,2</b>	51053	United States of America (Alaska)
91.819	13668	30.000	32,5	0	0,3	0	32,8	13130	1,4	<b>67</b>	45024	United States of America (lower 48)
590,91	58	10	0,4	0	0	0	0,4	100	0	<b>0,4</b>	191	Uruguay
7.928	1984	5.000	2	1,6	0,003	0	2,0	901	0,0732	<b>3,7</b>	6535	Venezuela
<b>1.544.394</b>	<b>200.604</b>	<b>392.881</b>	<b>64</b>	<b>3</b>	<b>0,6</b>	<b>0</b>	<b>64</b>	<b>22.937</b>	<b>3</b>	<b>104</b>	<b>660.787</b>	<b>AMERICA TOTAL</b>

# Country list of CO<sub>2</sub> emissions from degraded peatlands ASIA

1990

Country/area	Area of country /area	Peatland area 1990	Peat carbon stock 1990	Forested peatland area 1990	Emissions from 1990 peatland drained for agriculture before 1990	Emissions in 1990 from 1990 peatland drained for forestry before 1990	Emissions in 1990 from 1990 peatland drained for peat extraction before 1990	Emissions in 1990 from 1990 peatland drained for other purposes before 1990	Emissions in 1990 from peat from non-forested peatland	Total degrading peatland area in 1990	Emissions from peat extracted in 1990	Total emissions in 1990 from degrading peat
	km <sup>2</sup>	km <sup>2</sup>	Mton C	km <sup>2</sup>	Mton CO <sub>2</sub> /a	Mton CO <sub>2</sub> /a	Mton CO <sub>2</sub> /a	Mton CO <sub>2</sub> /a	Mton CO <sub>2</sub> /a	km <sup>2</sup>	Mton CO <sub>2</sub> /a	Mton CO <sub>2</sub> /a
<b>ASIA</b>												
Afghanistan	652225	120	6	0	0,08	0	0	0,08	0,16	40	0	0,16
Aldabra Islands	300	0	0	0	0	0	0	0	0	0	0	0
Armenia	29.800	55	6	0	0,06	0	0,03	0,03	0,12	40	0,04	0,15
Azerbaijan	86.600	32	3	0	0,06	0	0	0,02	0,08	25	0	0,08
Bahrain	707	0	0	0	0	0	0	0	0	0	0	0
Bangladesh	147.570	600	60	100	1,44	0	0,03	0,04	1,51	380	0,004	1,5
Bhutan	47.000	1	0,1	0	0	0	0	0	0	0	0	0
Brunei	5.765	1.000	100	900	0,2	0,2	0	0	0,2	100	0	0,4
Cambodia	181.035	0	0	0	0	0	0	0	0	0	0	0
Chagos Archipelago	60	0	0	0	0	0	0	0	0	0	0	0
China	9.571.300	34.770	3477	500	42	0	0,03	0,3	42,3	14.120	9,2	51
Cocos Islands	14	0	0	0	0	0	0	0	0	0	0	0
Cyprus	9.251	1	0,1	0	0	0	0	0	0	0	0	0
East-Timor	14.609	0	0	0	0	0	0	0	0	0	0	0
Gaza strip	360	0	0	0	0	0	0	0	0	0	0	0
Georgia	69.700	450	45	230	0,15	0	0,06	0	0,2	75	0	0,2
India	3.165.596	1000	100	500	2	0	0	0	2	500	0	2
Indonesia	1.904.443	270.000	55000	220.000	200	0	0	0	200	50.000	0	200
Iran	1.648.000	300	30	10	0,15	0,003	0	0,03	0,18	61	0	0,2
Iraq	438.317	7.000	700	0	3	0	0	0	3	1.000	0	3
Israel	21.946	50	5	0	0,15	0	0	0	0,15	50	0	0,15
Jammu and Kashmir	222.236	120	12	0	0,2	0	0,03	0	0,2	70	0	0,2
Japan	377.837	2.500	250	10	5,2	0	0	0	5,2	2.064	0	5,2
Jordan	89.556	0	0	0	0	0	0	0	0	0	0	0
Kazakhstan	2.717.300	50	5	10	0,03	0	0	0	0,03	10	0	0,03
Kuwait	17.818	0	0	0	0	0	0	0	0	0	0	0
Kyrgyzstan	198.500	153	15	0	0,4	0	0,01	0	0,4	145	0,004	0,4
Laos	236.800	200	20	100	0,4	0	0	0	0,4	100	0	0,4
Lebanon	10.452	1	0,1	0	0,003	0	0	0	0,003	1	0	0,003
Malaysia	329.758	27.000	5500	20.000	14	0	0,003	0	14	3.501	0,033	14

## 2008

Peatland area 2008	Peat carbon stock 2008	Forested peatland area 2008	Emissions in 2008 from 2008 peatland drained for agriculture before 2008	Emissions in 2008 from 2008 peatland drained for forestry before 2008	Emissions in 2008 from 2008 peatland drained for peat extraction before 2008	Emissions in 2008 from 2008 peatland drained for other purposes before 2008	Emissions from peat from non-forested peatland 2008	Total degrading peatland area 2008	Emissions from peat extracted in 2008	Total emissions from degrading peat 2008	Total technically possible future emissions	Country/area
km <sup>2</sup>	Mton C	km <sup>2</sup>	Mton CO <sub>2</sub> /a	Mton CO <sub>2</sub> /a	Mton CO <sub>2</sub> /a	Mton CO <sub>2</sub> /a	Mton CO <sub>2</sub> /a	km <sup>2</sup>	Mton CO <sub>2</sub> /a	Mton CO <sub>2</sub> /a	Mton CO <sub>2</sub>	ASIA
116,4	5,213	0	0,08	0	0	0,08	0,16	40	0	0,2	17	Afghanistan
0	0	0	0	0	0	0	0	0	0	0	0	Aldabra Islands
51,4	4,799	0	0,06	0	0,03	0,06	0,15	50	0,02	0,2	16	Armenia
29,75	2,831	0	0,06	0	0	0,015	0,08	25	0	0,1	9	Azerbaijan
0	0,000	0	0	0	0	0	0	0	0	0	0	Bahrain
565,8	53	100	1,44	0	0,03	0,04	1,51	380	0	1,5	173	Bangladesh
1	0,100	0	0	0	0	0	0	0	0	0	0,3	Bhutan
991	98,033	850	0,35	0,28	0	0	0,35	140	0	0,6	323	Brunei
0	0	0	0	0	0	0	0	0	0	0	0	Cambodia
0	0	0	0	0	0	0	0	0	0	0	0	Chagos Archipelago
33.499	3.223,820	500	67,5	0	0,03	0,3	67,8	27120	9,2	77	10619	China
0	0	0	0	0	0	0	0	0	0	0	0	Cocos Islands
1	0,100	0	0	0	0	0	0	0	0	0	0,3	Cyprus
0	0	0	0	0	0	0	0	0	0	0	0	East-Timor
0	0	0	0	0	0	0	0	0	0	0	0	Gaza strip
443,25	43,955	230	0,15	0	0,04	0	0,19	65	0	0,2	145	Georgia
955	90,164	500	2	0	0	0	2	500	0	2	297	India
265.500	54.016,393	14.000	500	0	0	0	500	125000	0	500	177930	Indonesia
294,51	29,100	10	0,15	0	0	0,03	0,18	60	0	0,2	96	Iran
2.000	200,000	0	0,3	0	0	3	3,3	1100	0	3,3	659	Iraq
45,5	4,262	0	0,12	0	0	0	0,12	40	0	0,1	14	Israel
113,7	10,992	0	0,18	0	0,03	0	0,21	70	0	0,2	36	Jammu and Kashmir
2.314	224,623	10	4,6	0	0	0	4,6	1842	0	4,6	740	Japan
0	0	0	0	0	0	0	0	0	0	0	0	Jordan
49,1	4,852	10	0,03	0	0	0	0,03	10	0	0,03	16	Kazakhstan
0	0,000	0	0	0	0	0	0	0	0	0	0	Kuwait
139,95	13,155	0	0,38	0	0,03	0	0,4	135	0,00366	0,4	43	Kyrgyzstan
191	18,033	90	0,4	0	0	0	0,4	100	0	0,4	59	Laos
0,91	0,085	0	0,003	0	0	0	0,003	1	0	0,003	0,3	Lebanon
26.685	5.431,052	14.000	48	0	0	0	48	12000	0	48	17890	Malaysia

# Country list of CO<sub>2</sub> emissions from degraded peatlands ASIA

1990

Country/area	Area of country /area	Peatland area 1990	Peat carbon stock 1990	Forested peatland area 1990	Emissions from 1990 peatland drained for agriculture before 1990	Emissions in 1990 from 1990 peatland drained for forestry before 1990	Emissions in 1990 from 1990 peatland drained for peat extraction before 1990	Emissions in 1990 from 1990 peatland drained for other purposes before 1990	Emissions in 1990 from peat from non-forested peatland	Total degrading peatland area in 1990	Emissions from peat extracted in 1990	Total emissions in 1990 from degrading peat
	km <sup>2</sup>	km <sup>2</sup>	Mton C	km <sup>2</sup>	Mton CO <sub>2</sub> /a	Mton CO <sub>2</sub> /a	Mton CO <sub>2</sub> /a	Mton CO <sub>2</sub> /a	Mton CO <sub>2</sub> /a	km <sup>2</sup>	Mton CO <sub>2</sub> /a	Mton CO <sub>2</sub> /a
<b>ASIA (ctd)</b>												
Maldives	298	1	0,1	0	0,004	0	0	0	0,004	1	0	<b>0,004</b>
Mongolia	1.566.500	27.200	900	10	30	0	0	0,3	30,3	10.100	0	<b>30,3</b>
Myanmar	676.552	2.000	150	1.000	4	0	0	0	4	1.000	0	<b>4,00</b>
Nepal	147.181	10	1	0	0,02	0	0	0	0,02	5	0	<b>0,02</b>
North Korea	120.538	1300	130	50	1,75	0,75	0,02	0	1,77	1.010	0,04	<b>2,6</b>
Oman	309.500	0	0	0	0	0	0	0	0	0	0	<b>0</b>
Pakistan	796.095	150	15	0	0,04	0	0,003	0	0,04	11	0,004	<b>0,05</b>
Philippines	300.000	110	11	30	0,32	0	0	0	0,32	80	0	<b>0,32</b>
Qatar	11.427	0	0	0	0	0	0	0	0	0	0	<b>0</b>
Russia Asian part	13.598.200	1.177.000	117700	20.000	12,5	2,5	1,5	2,5	16,5	8.000	0	<b>19</b>
Saudi Arabia	2.240.000	0	0	0	0	0	0	0	0	0	0	<b>0</b>
Seychelles	454	0	0	0	0	0	0	0	0	0	0	<b>0</b>
Singapore	648	150	3	1	0,004	0	0	0,07	0,07	141	0	<b>0,07</b>
South Korea	99.268	5	0,5	0	0,01	0	0	0	0,01	4	0	<b>0,01</b>
Sri Lanka	65.610	25	1	0	0,09	0	0	0	0,09	23	0	<b>0,09</b>
Syria	185.180	3	0,3	0	0,01	0	0	0	0,01	3	0	<b>0,01</b>
Taiwan	36.000	0	0	0	0	0	0	0	0	0	0	<b>0</b>
Tajikistan	143.100	1	0,1	0	0	0	0	0	0	0	0	<b>0</b>
Thailand	513.115	680	68	650	1,2	1	0	0	1,2	550	0	<b>2,2</b>
Turkey	779.452	130	13	0	0,27	0	0,03	0,03	0,33	110	0,04	<b>0,36</b>
Turkmenistan	488.100	100	5	0	0,3	0	0	0	0,3	100	0	<b>0,3</b>
United Arab Emirates	83.600	1	0	0	0,003	0	0	0	0,003	1	0	<b>0,003</b>
Uzbekistan	447.400	400	20	10	1,05	0	0	0,03	1,08	360	0	<b>1,08</b>
Vietnam	331.690	2.500	250	1.200	5,2	0	0,03	0	5,2	1.310	0,04	<b>5,3</b>
Yemen	527.970	1	0,1	0	0,003	0	0	0	0,003	1	0	<b>0,003</b>
<b>ASIA TOTAL</b>	<b>45.664.723</b>	<b>1.557.170</b>	<b>184.602</b>	<b>265311</b>	<b>326,26</b>	<b>4</b>	<b>1,8</b>	<b>3</b>	<b>331</b>	<b>95.092</b>	<b>9</b>	<b>345</b>

## 2008

Peatland area 2008	Peat carbon stock 2008	Forested peatland area 2008	Emissions in 2008 from 2008 peatland drained for agriculture before 2008	Emissions in 2008 from 2008 peatland drained for forestry before 2008	Emissions in 2008 from 2008 peatland drained for peat extraction before 2008	Emissions in 2008 from 2008 peatland drained for other purposes before 2008	Emissions from peat from non-forested peatland 2008	Total degrading peatland area 2008	Emissions from peat extracted in 2008	Total emissions from degrading peat 2008	Total technically possible future emissions	Country/area
km <sup>2</sup>	Mton C	km <sup>2</sup>	Mton CO <sub>2</sub> /a	Mton CO <sub>2</sub> /a	Mton CO <sub>2</sub> /a	Mton CO <sub>2</sub> /a	Mton CO <sub>2</sub> /a	km <sup>2</sup>	Mton CO <sub>2</sub> /a	Mton CO <sub>2</sub> /a	Mton CO <sub>2</sub>	ASIA (ctd)
0,91	0,1	0	0,004	0	0	0	0,004	1	0	<b>0,004</b>	0,3	Maldives
26.291	751	10	45	0	0	0,3	45,3	15100	0	<b>45,3</b>	2.474	Mongolia
1910	130	900	4	0	0	0	4	1000	0	<b>4</b>	429	Myanmar
9,55	0,426	0	0,02	0	0	0	0,02	5	0	<b>0,02</b>	1,40	Nepal
1.209	117	50	1,75	0,75	0,02	0	1,77	1010	0,04	<b>2,55</b>	387	North Korea
0	0	0	0	0	0	0	0	0	0	<b>0</b>	0	Oman
149,01	15	0	0,04	0	0,003	0	0,04	11	0,004	<b>0,05</b>	49	Pakistan
102,8	9	20	0,32	0	0	0	0,32	80	0	<b>0,32</b>	31	Philippines
0	0	0	0	0	0	0	0	0	0	<b>0</b>	0	Qatar
1.176.280	117.607	20.000	12,5	2,5	1,5	5	19	9000	0	<b>21,5</b>	387.396	Russia Asian part
0	0	0	0	0	0	0	0	0	0	<b>0</b>	0	Saudi Arabia
0	0	0	0	0	0	0	0	0	0	<b>0</b>	0	Seychelles
137,31	3	1	0,004	0	0	0,07	0,07	136	0	<b>0,07</b>	9	Singapore
4,64	0,4	0	0,01	0	0	0	0,01	4	0	<b>0,01</b>	1,3	South Korea
22,93	0,5	0	0,08	0	0	0	0,08	21	0	<b>0,08</b>	1,6	Sri Lanka
2,73	0,3	0	0,01	0	0	0	0,01	3	0	<b>0,01</b>	0,84	Syria
0	0	0	0	0	0	0	0	0	0	<b>0</b>	0	Taiwan
1	0,1	0	0	0	0	0	0	0	0	<b>0</b>	0,33	Tajikistan
630,5	57	280	1,4	0,76	0	0	1,4	540	0	<b>2,16</b>	188	Thailand
120,1	11	0	0,26	0	0,03	0,03	0,32	105	0,04	<b>0,36</b>	37	Turkey
91	4	0	0,27	0	0	0	0,27	90	0	<b>0,27</b>	12	Turkmenistan
0,91	0,1	0	0,003	0	0	0	0,003	1	0	<b>0,003</b>	0,3	United Arab Emirates
367,6	15	10	1,05	0	0	0,02	1,07	355	0	<b>1,07</b>	48	Uzbekistan
2.382	224	800	5,2	0	0,03	0	5,23	1310	0	<b>5,2</b>	738	Vietnam
0,91	0,1	0	0,003	0	0	0	0,003	1	0	<b>0,003</b>	0,3	Yemen
<b>1.545.710</b>	<b>182.419</b>	<b>52.371</b>	<b>698</b>	<b>4</b>	<b>1,7</b>	<b>9</b>	<b>708</b>	<b>197.451</b>	<b>9</b>	<b>722</b>	<b>600.899</b>	<b>ASIA TOTAL</b>



# Country list of CO2 emissions from degraded peatlands AUSTRALASIA and the PACIFIC ISLES

1990

Country/area	Area of country /area	Peatland area 1990	Peat carbon stock 1990	Forested peatland area 1990	Emissions from 1990 peatland drained for agriculture before 1990	Emissions from 1990 peatland drained for forestry before 1990	Emissions in 1990 from 1990 peatland drained for peat extraction before 1990	Emissions in 1990 from 1990 peatland drained for other purposes before 1990	Emissions in 1990 from peat from non-forested peatland	Total degrading peatland area in 1990	Emissions from peat extracted in 1990	Total emissions in 1990 from degrading peat
	km <sup>2</sup>	km <sup>2</sup>	Mton C	km <sup>2</sup>	Mton CO <sub>2</sub> /a	Mton CO <sub>2</sub> /a	Mton CO <sub>2</sub> /a	Mton CO <sub>2</sub> /a	Mton CO <sub>2</sub> /a	km <sup>2</sup>	Mton CO <sub>2</sub> /a	Mton CO <sub>2</sub> /a
<b>AUSTRALASIA &amp; PACIFIC ISLES</b>												
American Samoa (USA)	195	0	0	0	0	0	0	0	0	0	0	0
Australia (excl. Tasmania)	7.614.500	1.000	100	50	3,6	0	0,03	0	3,6	910	0,04	3,7
Clipperton	6	0	0	0	0	0	0	0	0	0	0	0
Cook Islands	237	4	0,4	1	0,01	0	0	0	0,012	3	0	0,01
Easter Island (Chile)	117	1	0,1	0	0	0	0	0	0	0	0	0
Fiji	18.376	40	4	20	0,08	0	0	0	0,08	20	0	0,08
French Polynesia	3.521	1	0,1	0	0,004	0	0	0	0,004	1	0	0,004
Galápagos Islands (Ecuador)	7.844	1	0,1	0	0	0	0	0	0	0	0	0
Guam (U.S.A.)	541	1	0,1	1	0,004	0	0	0	0,004	1	0	0,004
Hawaii (U.S.A.)	16.179	37	4	5	0,02	0	0	0	0,02	5	0	0,02
Islas Desventuradas (Chile)	10	0	0	0	0	0	0	0	0	0	0	0
Juan Fernández Islands (Chile)	183	1	0,1	0	0	0	0	0	0	0	0	0
Kiribati	811	2	0,2	0	0,004	0	0	0	0,004	1	0	0,004
Marshall Islands	181	0	0	0	0	0	0	0	0	0	0	0
Micronesia (Federated States of)	702	35	4	30	0,02	0	0	0	0,02	5	0	0,02
Nauru	21	0	0	0	0	0	0	0	0	0	0	0
New Caledonia and Dep. (France)	19.058	1	0,1	1	0	0	0	0	0	0	0	0
New Zealand	270.534	2.100	210	50	4,5	0	0,13	0	4,6	1.550	7,0	11,6
Palau	488	1	0,1	1	0	0	0	0	0	0	0	0
Papua New Guinea	462.840	60.000	6.000	50.000	3,5	0	0	0	3,5	870	0	3,5
Pitcairn Islands	47	0	0	0	0	0	0	0	0	0	0	0
Sala y Gómez	3	0	0	0	0	0	0	0	0	0	0	0
Samoa	2.831	2	0,2	1	0,004	0	0	0	0,004	1	0	0,004
Solomon Islands	27.556	10	1	5	0,01	0	0	0	0,012	3	0	0,01
Tasmania	68.331	10.000	500	0	3	0	0,003	0	3	1.001	0,004	3
Tokelau	10	0	0	0	0	0	0	0	0	0	0	0
Tonga	750	1	0,1	1	0,004	0	0	0	0,004	1	0	0,004
Tuvalu	26	0	0	0	0	0	0	0	0	0	0	0
Vanuatu	12.190	0	0	0	0	0	0	0	0	0	0	0
<b>TOTAL AUSTRALASIA &amp; PACIFIC ISLES</b>	<b>8.528.088</b>	<b>73.238</b>	<b>6.824</b>	<b>50166</b>	<b>14,76</b>	<b>0</b>	<b>0,2</b>	<b>0</b>	<b>15</b>	<b>4.372</b>	<b>7</b>	<b>22,0</b>

## 2008

Peatland area 2008	Peat carbon stock 2008	Forested peatland area 2008	Emissions in 2008 from 2008 peatland drained for agriculture before 2008	Emissions in 2008 from 2008 peatland drained for forestry before 2008	Emissions in 2008 from 2008 peatland drained for peat extraction before 2008	Emissions in 2008 from 2008 peatland drained for other purposes before 2008	Emissions from peat from non-forested peatland 2008	Total degrading peatland area 2008	Emissions from peat extracted in 2008	Total emissions from degrading peat 2008	Total technically possible future emissions	Country/area
km <sup>2</sup>	Mton C	km <sup>2</sup>	Mton CO <sub>2</sub> /a	Mton CO <sub>2</sub> /a	Mton CO <sub>2</sub> /a	Mton CO <sub>2</sub> /a	Mton CO <sub>2</sub> /a	km <sup>2</sup>	Mton CO <sub>2</sub> /a	Mton CO <sub>2</sub> /a	Mton CO <sub>2</sub>	
0	0	0	0	0	0	0	0	0	0	0	0	Australasia & Pacific Isles
918	82	50	3,4	0	0,03	0	3,43	860	0,04	3,47	270	American Samoa (USA)
0	0	0	0	0	0	0	0	0	0	0	0	Australia (excl. Tasmania)
4	0,4	1	0,012	0	0	0	0,01	3	0	0,01	1,1	Clipperton
1	0,1	0	0	0	0	0	0	0	0	0	0,3	Cook Islands
38	4	20	0,08	0	0	0	0,08	20	0	0,08	12	Easter Island (Chile)
1	0,1	0	0,004	0	0	0	0,004	1	0	0	0,3	Fiji
1	0,1	0	0	0	0	0	0	0	0	0	0,3	French Polynesia
1	0,1	1	0,004	0	0	0	0,004	1	0	0,004	0,3	Galápagos Islands (Ecuador)
37	4	5	0,02	0	0	0	0,02	5	0	0,02	12	Guam (U.S.A.)
0	0	0	0	0	0	0	0	0	0	0	0	Hawaii (U.S.A.)
1	0,1	0	0	0	0	0	0	0	0	0	0,3	Islas Desventuradas (Chile)
2	0,2	0	0,004	0	0	0	0,004	1	0	0,004	0,6	Juan Fernández Islands (Chile)
0	0	0	0	0	0	0	0	0	0	0	0	Kiribati
35	3	30	0,02	0	0	0	0,02	5	0	0,02	11	Marshall Islands
0	0	0	0	0	0	0	0	0	0	0	0	Micronesia (Federated States of)
1	0,1	1	0	0	0	0	0	0	0	0	0,3	Nauru
1961	170	50	3,9	0	0,13	0	4,03	1350	0,1	4,1	559	New Caledonia and Dep. (France)
1	0,1	1	0	0	0	0	0	0	0	0	0,3	New Zealand
59922	5983	5.500	20	0	0	0	0,004	5000	0	20	19.708	Palau
0	0	0	0	0	0	0	0,01	0	0	0	0	Papua New Guinea
0	0	0	0	0	0	0	3	0	0	0	0	Pitcairn Islands
2	0,2	1	0,004	0	0	0	0,004	1	0	0,004	0,6	Sala y Gómez
10	1	5	0,01	0	0	0	0,01	3	0	0,01	3	Samoa
9910	485	0	3	0	0,03	0	3,03	1010	0,004	3	1.598	Solomon Islands
0	0	0	0	0	0	0	0	0	0	0	0	Tasmania
1	0,1	1	0,004	0	0	0	0,004	1	0	0,004	0,3	Tokelau
0	0	0	0	0	0	0	0	0	0	0	0	Tonga
0	0	0	0	0	0	0	0	0	0	0	0	Tuvalu
0	0	0	0	0	0	0	0	0	0	0	0	Vanuatu
<b>72.845</b>	<b>6.733</b>	<b>5.666</b>	<b>30</b>	<b>0</b>	<b>0,2</b>	<b>0</b>	<b>14</b>	<b>8.261</b>	<b>0</b>	<b>30,8</b>	<b>22.178</b>	<b>TOTAL AUSTRALASIA &amp; PACIFIC ISLES</b>

# Country list of CO<sub>2</sub> emissions from degraded peatlands EUROPE

1990

Country/area	Area of country /area	Peatland area 1990	Peat carbon stock 1990	Forested peatland area 1990	Emissions from 1990 peatland drained for agriculture before 1990	Emissions in 1990 from 1990 peatland drained for forestry before 1990	Emissions in 1990 from 1990 peatland drained for peat extraction before 1990	Emissions in 1990 from 1990 peatland drained for other purposes before 1990	Emissions in 1990 from peat from non-forested peatland	Total degrading peatland area in 1990	Emissions from peat extracted in 1990	Total emissions in 1990 from degrading peat
	km <sup>2</sup>	km <sup>2</sup>	Mton C	km <sup>2</sup>	Mton CO <sub>2</sub> /a	Mton CO <sub>2</sub> /a	Mton CO <sub>2</sub> /a	Mton CO <sub>2</sub> /a	Mton CO <sub>2</sub> /a	km <sup>2</sup>	not included	Mton CO <sub>2</sub> /a
<b>EUROPE</b>												
Albania	28748	179	18	0	0,61	0	0	0	0,61	175		<b>0,61</b>
Andorra	468	5	0,5	0	0,003	0	0	0	0,003	1		<b>0,003</b>
Austria	83858	200	20	10	0,25	0,02	0,02	0	0,27	120		<b>0,29</b>
Azores	2.335	3	0	0	0	0	0	0	0	0		<b>0</b>
Belarus	207.595	23.976	1320	6.000	27,1	7,7	0,55	6	33,7	18.050		<b>41,3</b>
Belgium	30.528	160	16	11	0,25	0,02	0,08	0	0,33	160		<b>0,35</b>
Bosnia & Herz.	51.129	150	15	0	0,35	0	0	0	0,35	140		<b>0,35</b>
Bulgaria	110.994	120	7	1	0,2	0	0,008	0,01	0,22	90		<b>0,22</b>
Channel Islands	205	10	1	0	0,03	0	0	0	0,03	10		<b>0,03</b>
Croatia	56.510	2	0	0	0,003	0	0	0	0,003	1		<b>0,003</b>
Czech Republic	78.864	270	27	90	0,28	0,16	0,05	0	0,33	220		<b>0,49</b>
Denmark	43.094	1.400	98	750	1,5	1,45	0,08	0	1,58	1.375		<b>3,03</b>
Estonia	45.227	10.000	1000	2.000	7,5	6	0,5	0	8	6.330		<b>14,0</b>
Faroe Islands	1.400	30	3	0	0,008	0	0,003	0	0,01	6		<b>0,01</b>
Finland	338.145	85.000	5320	60.000	11,9	39,6	0,65	0	12,5	61.900		<b>52,1</b>
France	543.965	1500	150	50	2,5	0,2	0,02	0	2,52	1115		<b>2,72</b>
FYRO Macedonia	25.713	30	3	15	0,06	0	0	0	0,06	25		<b>0,06</b>
Germany	356.970	18.000	2200	2.600	32,5	2	1,2	0	33,7	14.800		<b>35,7</b>
Gibraltar	6	0	0	0	0	0	0	0	0	0		<b>0</b>
Greece	131.957	71	7	1	0,14	0	0,003	0,003	0,14	57		<b>0,14</b>
Hungary	93.030	330	33	0	0,75	0	0,03	0	0,78	320		<b>0,78</b>
Iceland	103.000	14.000	650	40	17,5	0,03	0	0,01	17,5	7.050		<b>17,5</b>
Ireland	70.273	11.500	1250	260	8,9	0,49	1,11	0	10	4.558		<b>10,5</b>
Isle of Man	572	0	0	0	0	0	0	0	0	0		<b>0</b>
Italy	301.323	200	20	10	0,35	0	0	0	0,35	100		<b>0,35</b>
Jan Mayen	373	0	0	0	0	0	0	0	0	0		<b>0</b>
Latvia	63.700	6.600	660	700	3,1	1,4	0,57	0	3,7	2.330		<b>5,10</b>
Liechtenstein	160	1	0,1	0	0,003	0	0	0	0,003	1		<b>0,003</b>
Lithuania	65.300	3.520	352	1.250	3,1	2,5	0,27	0	3,4	2.680		<b>5,90</b>
Luxembourg	2.586	3	0,3	1	0,005	0,002	0	0	0,005	3		<b>0,007</b>

## 2008

Peatland area 2008	Peat carbon stock 2008	Forested peatland area 2008	Emissions in 2008 from 2008 peatland drained for agriculture before 2008	Emissions in 2008 from 2008 peatland drained for forestry before 2008	Emissions in 2008 from 2008 peatland drained for peat extraction before 2008	Emissions in 2008 from 2008 peatland drained for other purposes before 2008	Emissions from peat from non-forested peatland 2008	Total degrading peatland area 2008	Emissions from peat extracted in 2008	Total emissions from degrading peat 2008	Total technically possible future emissions	Country/area
km <sup>2</sup>	Mton C	km <sup>2</sup>	Mton CO <sub>2</sub> /a	Mton CO <sub>2</sub> /a	Mton CO <sub>2</sub> /a	Mton CO <sub>2</sub> /a	Mton CO <sub>2</sub> /a	km <sup>2</sup>	not included	Mton CO <sub>2</sub> /a	Mton CO <sub>2</sub>	EUROPE
163,25	14,888	0	0,56	0	0	0	0,56	160		<b>0,56</b>	49	Albania
4,91	0,488	0	0,003	0	0	0	0,003	1		<b>0,003</b>	1,6	Andorra
189,2	18,588	10	0,25	0,02	0,02	0	0,27	120		<b>0,29</b>	61	Austria
3	0,300	0	0	0	0	0	0	0		<b>0</b>	1,0	Azores
22.352	1.305.000	7.000	27,1	7,66	0,55	6	33,7	18050		<b>41,3</b>	4.299	Belarus
145,6	14,303	9	0,24	0,02	0,08	0	0,32	160		<b>0,34</b>	47	Belgium
137,4	13,279	0	0,32	0	0	0	0,32	127		<b>0,32</b>	44	Bosnia & Herz.
111,9	5,921	0	0,16	0	0	0,01	0,17	70		<b>0,17</b>	20	Bulgaria
9,1	0,877	0	0,02	0	0	0	0,02	9		<b>0,02</b>	2,9	Channel Islands
1,91	0,188	0	0,00	0	0	0	0,002	0,9		<b>0,002</b>	0,6	Croatia
250,2	24,315	90	0,28	0,16	0,05	0	0,33	220		<b>0,49</b>	80	Czech Republic
1,276	73,628	750	1,5	1,45	0,08	0	1,58	1375		<b>3,03</b>	243	Denmark
9,430	919,472	2.000	7,5	1,6	0,45	0	7,95	4900		<b>9,55</b>	3.029	Estonia
29,46	2,938	0	0,01	0	0,003	0	0,01	6		<b>0,01</b>	10	Faroe Islands
79429	5.294.000	60.000	7,5	41,58	0,85	0	8,35	63250		<b>49,9</b>	17.438	Finland
1,400	136,611	50	2,5	0,2	0,03	0	2,53	1120		<b>2,73</b>	450	France
27,75	2,693	15	0,05	0	0	0	0,05	20		<b>0,05</b>	9	FYRO Macedonia
16.668	2.017,586	2600	30	2	0	0	30	13000		<b>32</b>	6.646	Germany
0	0	0	0	0	0	0	0	0		<b>0</b>	0	Gibraltar
65,87	6,397	1	0,13	0	0,003	0	0,14	54		<b>0,14</b>	21	Greece
301,2	28,822	0	0,68	0	0,03	0	0,71	290		<b>0,71</b>	95	Hungary
13,366	563,748	40	17,5	0,03	0	0	17,5	7040		<b>17,5</b>	1.857	Iceland
11,090	1.129,796	200	6,35	0,2	1,65	0	8	3740		<b>8,2</b>	3.722	Ireland
0	0	0	0	0	0	0	0	0		<b>0</b>	0	Isle of Man
191	18,279	10	0,35	0	0	0	0,35	100		<b>0,35</b>	60	Italy
0	0,000	0	0	0	0	0	0	0		<b>0</b>	0	Jan Mayen
6,390	634,943	700	2,25	1,4	0,57	0	2,82	1980		<b>4,22</b>	2.092	Latvia
0,91	0,088	0	0,003	0	0	0	0,003	1		<b>0,003</b>	0,3	Liechtenstein
3,279	323,008	1.300	3,25	2,6	0,21	0	3,46	2740		<b>6,1</b>	1.064	Lithuania
2,73	0,266	1	0,003	0,002	0	0	0,003	2		<b>0,005</b>	0,875	Luxembourg

# Country list of CO<sub>2</sub> emissions from degraded peatlands EUROPE

1990

Country/area	Area of country /area	Peatland area 1990	Peat carbon stock 1990	Forested peatland area 1990	Emissions from 1990 peatland drained for agriculture before 1990	Emissions in 1990 from 1990 peatland drained for forestry before 1990	Emissions in 1990 from 1990 peatland drained for peat extraction before 1990	Emissions in 1990 from 1990 peatland drained for other purposes before 1990	Emissions in 1990 from peat from non-forested peatland	Total degrading peatland area in 1990	Emissions from peat extracted in 1990	Total emissions in 1990 from degrading peat
	km <sup>2</sup>	km <sup>2</sup>	Mton C	km <sup>2</sup>	Mton CO <sub>2</sub> /a	Mton CO <sub>2</sub> /a	Mton CO <sub>2</sub> /a	Mton CO <sub>2</sub> /a	Mton CO <sub>2</sub> /a	km <sup>2</sup>	not included	Mton CO <sub>2</sub> /a
<b>EUROPE (ctd)</b>												
Malta	316	0	0	0	0	0	0	0	0	0		0
Moldova	33.700	10	1,000	0	0,02	0	0	0	0,02	9		0,02
Monaco	2	0	0	0	0	0	0	0	0	0		0
Netherlands	41.526	3770	377,000	117	8,6	0	0,15	0	8,8	3.550		8,8
Norway	385.639	30.000	2.250,000	2.400	2,1	1,6	0,3	0	2,42	3.495		4,1
Poland	312.684	12.500	1.000,000	21.000	20	4	1,2	0	21,2	10.800		25,2
Portugal	92.345	20	2,000	1	0,05	0	0,003	0	0,06	16		0,06
Romania	237.500	1.000	100,000	10	1	0	0,03	0	1,03	420		1,03
Russia European part	3.477.000	213.000	21.300,000	50.000	85	58	132	0	217	151.000		275
San Marino	61	0	0	0	0	0	0	0	0	0		0
and Montenegro	77.474	300	30,000	0	0,5	0	0	0	0,5	200		0,5
Slovakia	49.035	130	13,000	30	0,18	0,1	0,02	0	0,19	129		0,29
Slovenia	20.253	80	8,000	1	0,18	0	0	0	0,18	70		0,18
Spain	505.990	60	6,000	1	0,11	0	0,003	0,02	0,12	36		0,12
Svalbard /Spitsbergen	62.160	10	1,000	0	0	0	0	0	0	0		0
Sweden	449.964	66.800	6.680,000	30.000	7,5	7	0,08	0	7,6	13.080		14,6
Switzerland	41.285	300	30,000	10	0,25	0,02	0,03	0	0,28	130		0,3
Ukraine	603.700	8.000	800,000	2.000	3,8	4	0,48	0	4,2	3.820		8,2
United Kingdom	244.110	17.500	1.800,000	2.200	5,1	4,4	0,08	0	5,2	4.304		9,6
Vatican City	44	0	0	0	0	0	0	0	0	0		0
<b>EUROPE TOTAL</b>	<b>9.474.806</b>	<b>530.740</b>	<b>47.569</b>	<b>181559</b>	<b>253,28</b>	<b>140,64</b>	<b>139</b>	<b>6</b>	<b>399</b>	<b>312.676</b>		<b>539,5</b>

## 2008

Peatland area 2008	Peat carbon stock 2008	Forested peatland area 2008	Emissions in 2008 from 2008 peatland drained for agriculture before 2008	Emissions in 2008 from 2008 peatland drained for forestry before 2008	Emissions in 2008 from 2008 peatland drained for peat extraction before 2008	Emissions in 2008 from 2008 peatland drained for other purposes before 2008	Emissions from peat from non-forested peatland 2008	Total degrading peatland area 2008	Emissions from peat extracted in 2008	Total emissions from degrading peat 2008	Total technically possible future emissions	Country/area
km <sup>2</sup>	Mton C	km <sup>2</sup>	Mton CO <sub>2</sub> /a	Mton CO <sub>2</sub> /a	Mton CO <sub>2</sub> /a	Mton CO <sub>2</sub> /a	Mton CO <sub>2</sub> /a	km <sup>2</sup>	not included	Mton CO <sub>2</sub> /a	Mton CO <sub>2</sub>	EUROPE (ctd)
0	0	0	0	0	0	0	0	0		0	0	Malta
9,19	0,889	0	0,02	0	0	0	0,02	8		0,02	3	Moldova
0	0	0	0	0	0	0	0	0		0	0	Monaco
3450,5	333,844	130	5,75	0	0	0	5,75	2300		5,8	1.100	Netherlands
29,685	2,229,509	2.700	2,25	2,87	0,3	0	2,55	5300		5,4	7.344	Norway
11528	875,661	2.500	17,5	4,8	1,2	0	18,7	10200		23,5	2.884	Poland
18,56	1,725	1	0,05	0	0,003	0	0,05	15		0,05	6	Portugal
962,2	94,934	10	1	0	0,03	0	1,03	420		1,03	313	Romania
199.410	19.947,541	50.000	87,5	40	11,4	0	98,9	62600		139	65.707	Russia European part
0	0,000	0	0	0	0	0	0	0		0	0	San Marino
282	27,541	0	0,58	0	0	0	0,58	230		0,58	91	and Montenegro
118,39	11,584	60	0,15	0,08	0,02	0	0,17	110		0,25	38	Slovakia
73,7	7,139	1	0,17	0	0	0	0,17	67		0,17	24	Slovenia
56,76	5,398	1	0,11	0	0,005	0,02	0,13	37		0,13	18	Spain
10	1,000	0	0	0	0	0	0	0		0	3	Svalbard /Spitsbergen
65.623	5.000,000	30.000	7,5	7	0,08	0	7,58	13080		14,6	16.470	Sweden
288,3	28,525	15	0,25	0,02	0,03	0	0,28	130		0,3	94	Switzerland
7,656	759,525	2.000	1,75	3	0,15	0	1,9	2300		4,9	2.502	Ukraine
17,113	1,744,657	2.200	5,13	4,4	0,08	0	5,21	4304		9,6	5.747	United Kingdom
0	0	0	0	0	0	0	0	0		0	0	Vatican City
<b>504.607</b>	<b>43.620</b>	<b>164.394</b>	<b>238</b>	<b>121</b>	<b>18</b>	<b>6,03</b>	<b>262</b>	<b>219.637</b>		<b>383,2</b>	<b>143.684</b>	<b>EUROPE TOTAL</b>

# Country list of CO<sub>2</sub> emissions from degraded peatlands

## ANTARCTICA and the SUBANTARCTIC ISLES

1990

Country/area	Area of country /area	Peatland area 1990	Peat carbon stock 1990	Forested peatland area 1990	Emissions from 1990 peatland drained for agriculture before 1990	Emissions in 1990 from 1990 peatland drained for forestry before 1990	Emissions in 1990 from 1990 peatland drained for peat extraction before 1990	Emissions in 1990 from 1990 peatland drained for other purposes before 1990	Emissions in 1990 from peat from non-forested peatland	Total degrading peatland area in 1990	Emissions from peat extracted in 1990	Total emissions in 1990 from degrading peat
	km <sup>2</sup>	km <sup>2</sup>	Mton C	km <sup>2</sup>	Mton CO <sub>2</sub> /a	Mton CO <sub>2</sub> /a	Mton CO <sub>2</sub> /a	Mton CO <sub>2</sub> /a	Mton CO <sub>2</sub> /a	km <sup>2</sup>	Mton CO <sub>2</sub> /a	Mton CO <sub>2</sub> /a
<b>ANTARCTICA and the SUBANTARCTIC ISLES</b>												
Adams Island		0	0,000	0	0	0	0	0	0	0	0	0
Adelaide Island	3.265	0	0,000	0	0	0	0	0	0	0	0	0
Amsterdam and St-Paul Islands	62	30	3,000	0	0	0	0	0	0	0	0	0
Antarctica	14.000.000	3000	200,000	0	0	0	0	0	0	0	0	0
Antipodes Islands	22	18	1,800	0	0	0	0	0	0	0	0	0
Anvers Island	2.432	10	0,500	0	0	0	0	0	0	0	0	0
Auckland Islands	570	400	40,000	0	0	0	0,001	0,001	1	0	0,001	0,001
Balleny Islands	400	0	0,000	0	0	0	0	0	0	0	0	0
Bouvetøya		0	0,000	0	0	0	0	0	0	0	0	0
Campbell Island group	113	80	8,000	0	0	0	0,005	0,005	5	0	0,005	0,005
Chatham Islands	963	450	90,000	0	0	0	0	0	0	0	0	0
Falkland Islands / Islas Malvinas	12.173	11500	1.150,000	0	0,005	0	0,02	1	1,025	1025	0,0366	1,0616
Heard Island and McDonald Islands	370	10	1,000	0	0	0	0	0	0	0	0	0
Îles Crozet	325	30	3,000	0	0	0	0	0	0	0	0	0
Kerguelen Islands	6.993	20	2,000	0	0	0	0,001	0,001	1	0	0,001	0,001
Macquarie Island	128	60	6,000	0	0	0	0	0	0	0	0	0
Prince Edward Islands	360	15	1,500	0	0	0	0	0	0	0	0	0
The Snares	4	0	0,000	0	0	0	0	0	0	0	0	0
South Georgia	3.755	200	20,000	0	0	0	0	0	0	0	0	0
South Orkney Islands	620	10	0,500	0	0	0	0	0	0	0	0	0
South Sandwich Islands	580	1	0,003	0	0	0	0	0	0	0	0	0
South Shetland Islands	4.660	0,2	0,010	0	0	0	0	0	0	0	0	0
St. Helena	122	65	6,500	0	0	0	0	0	0	0	0	0
Tristan da Cunha	202	65	6,500	0	0	0	0	0	0	0	0	0
<b>ANTARCTICA and the SUBANTARCTIC ISLES TOTAL</b>	<b>14.038.119</b>	<b>15.964</b>	<b>1.540</b>	<b>0</b>	<b>0,01</b>	<b>0,00</b>	<b>1.247</b>	<b>1</b>	<b>1</b>	<b>1.032</b>	<b>0,04</b>	<b>1,1</b>

No peatland data is available for following islands and territories: Bearing Island, Booth Island, Bounty Islands, Bowman Island, Brabant Island, Breaker Island, Christine Island, Cormorant Island, Cuverville Island, Danco Island, DeLaca Island, Direction Island, Dream Island, Drygalski Island, Dundee Island, Eichorst Island, Elephant Rocks, Enterprise Island, Henderson Island, Hermit Island, Humble Island, Janus Island, Joinville Island group, Laggard Island, Liège Island, Limitrophe Island, Lipps Island, Litchfield Island, Masson Island, Mill Island, Nansen Island, North Nansen Island, Ohlin Island, Outcast Islands, Paulet Island, Robertson Island, Rongé Island, Split Rock, Spume Island, Stepping Stones, Stonington Island, Surge Rocks, Torgersen Island, Tower Island, Trinity Island, Wiencke Island, Windmill Islands.

## 2008

Peatland area 2008	Peat carbon stock 2008	Forested peatland area 2008	Emissions in 2008 from 2008 peatland drained for agriculture before 2008	Emissions in 2008 from 2008 peatland drained for forestry before 2008	Emissions in 2008 from 2008 peatland drained for peat extraction before 2008	Emissions in 2008 from 2008 peatland drained for other purposes before 2008	Emissions from peat from non-forested peatland 2008	Total degrading peatland area 2008	Emissions from peat extracted in 2008	Total emissions from degrading peat 2008	Total technically possible future emissions	Country/area
km <sup>2</sup>	Mton C	km <sup>2</sup>	Mton CO <sub>2</sub> /a	Mton CO <sub>2</sub> /a	Mton CO <sub>2</sub> /a	Mton CO <sub>2</sub> /a	Mton CO <sub>2</sub> /a	km <sup>2</sup>	Mton CO <sub>2</sub> /a	Mton CO <sub>2</sub> /a	Mton CO <sub>2</sub>	ANTARCTICA and the SUBANTARCTIC ISLES
0	0	0	0	0	0	0	0	0	0	0	0	Adams Island
0	0	0	0	0	0	0	0	0	0	0	0	Adelaide Island
30	3	0	0	0	0	0	0	0	0	0	10	Amsterdam and St-Paul Islands
3.000	200	0	0	0	0	0	0	0	0	0	659	Antarctica
18	1,8	0	0	0	0	0	0	0	0	0	6	Antipodes Islands
10	0,5	0	0	0	0	0	0	0	0	0	2	Anvers Island
400	39,99508197	0	0	0	0	0,001	0,001	1	0	0,001	132	Auckland Islands
0	0	0	0	0	0	0	0	0	0	0	0	Balleny Islands
0	0	0	0	0	0	0	0	0	0	0	0	Bouvetøya
79,55	7,975409836	0	0	0	0	0,005	0,005	5	0	0,005	26	Campbell Island group
450	90	0	0	0	0	0	0	0	0	0	296	Chatham Islands
11407,75	1144,869016	0	0,005	0	0,02	1	1,025	1025	0	1,025	3.771	Falkland Islands / Islas Malvinas
10	1	0	0	0	0	0	0	0	0	0	3	Heard Island and McDonald Islands
30	3	0	0	0	0	0	0	0	0	0	10	Îles Crozet
19,91	1,995081967	0	0	0	0	0,001	0,001	1	0	0,001	7	Kerguelen Islands
60	6	0	0	0	0	0	0	0	0	0	20	Macquarie Island
15	1,5	0	0	0	0	0	0	0	0	0	5	Prince Edward Islands
0	0	0	0	0	0	0	0	0	0	0	0	The Snares
200	20	0	0	0	0	0	0	0	0	0	66	South Georgia
10	0,5	0	0	0	0	0	0	0	0	0	2	South Orkney Islands
1	0,003	0	0	0	0	0	0	0	0	0	0	South Sandwich Islands
0	0,01	0	0	0	0	0	0	0	0	0	0	South Shetland Islands
65	6,5	0	0	0	0	0	0	0	0	0	21	St. Helena
65	6,5	0	0	0	0	0	0	0	0	0	21,41	Tristan da Cunha
<b>15.871</b>	<b>1.535</b>	<b>245</b>	<b>0</b>	<b>260</b>	<b>1.237</b>	<b>1,01</b>	<b>1</b>	<b>1.032</b>	<b>0</b>	<b>1,0</b>	<b>5.057</b>	<b>ANTARCTICA and the SUBANTARCTIC ISLES TOTAL</b>



# CO<sub>2</sub> emissions from degraded peatlands THE WORLD

1990

Country/area	Area of country /area	Peatland area 1990	Peat carbon stock 1990	Forested peatland area 1990	Emissions from 1990 peatland drained for agriculture before 1990	Emissions in 1990 from 1990 peatland drained for forestry before 1990	Emissions in 1990 from 1990 peatland drained for peat extraction before 1990	Emissions in 1990 from 1990 peatland drained for other purposes before 1990	Emissions in 1990 from peat from non-forested peatland	Total degrading peatland area in 1990	Emissions from peat extracted in 1990	Total emissions in 1990 from degrading peat
	km <sup>2</sup>	km <sup>2</sup>	Mton C	km <sup>2</sup>	Mton CO <sub>2</sub> /a	Mton CO <sub>2</sub> /a	Mton CO <sub>2</sub> /a	Mton CO <sub>2</sub> /a	Mton CO <sub>2</sub> /a	km <sup>2</sup>	not included	Mton CO <sub>2</sub> /a
<b>WORLD</b>					<b>704</b>	<b>148</b>	<b>1.389</b>	<b>10,5</b>	<b>857</b>	<b>447.637</b>		<b>1.058</b>

**2008**

Peatland area 2008	Peat carbon stock 2008	Forested peatland area 2008	Emissions in 2008 from 2008 peatland drained for agriculture before 2008	Emissions in 2008 from 2008 peatland drained for forestry before 2008	Emissions in 2008 from 2008 peatland drained for peat extraction before 2008	Emissions in 2008 from 2008 peatland drained for other purposes before 2008	Emissions from peat from non-forested peatland 2008	Total degrading peatland area 2008	Emissions from peat extracted in 2008	Total emissions from degrading peat 2008	Total technically possible future emissions	Country/area
km <sup>2</sup>	Mton C	km <sup>2</sup>	Mton CO <sub>2</sub> /a	Mton CO <sub>2</sub> /a	Mton CO <sub>2</sub> /a	Mton CO <sub>2</sub> /a	Mton CO <sub>2</sub> /a	km <sup>2</sup>	not included	Mton CO <sub>2</sub> /a	Mton CO <sub>2</sub>	WORLD
3.813.608	445.696	661.362	1.086	389	1.258	16,0	1.106	463.533		1.298	1.468.124	TOTAL

## Mission:

To sustain and restore wetlands, their resources and biodiversity for future generations.

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