Peatlands:

knowns, unknowns and blind spots

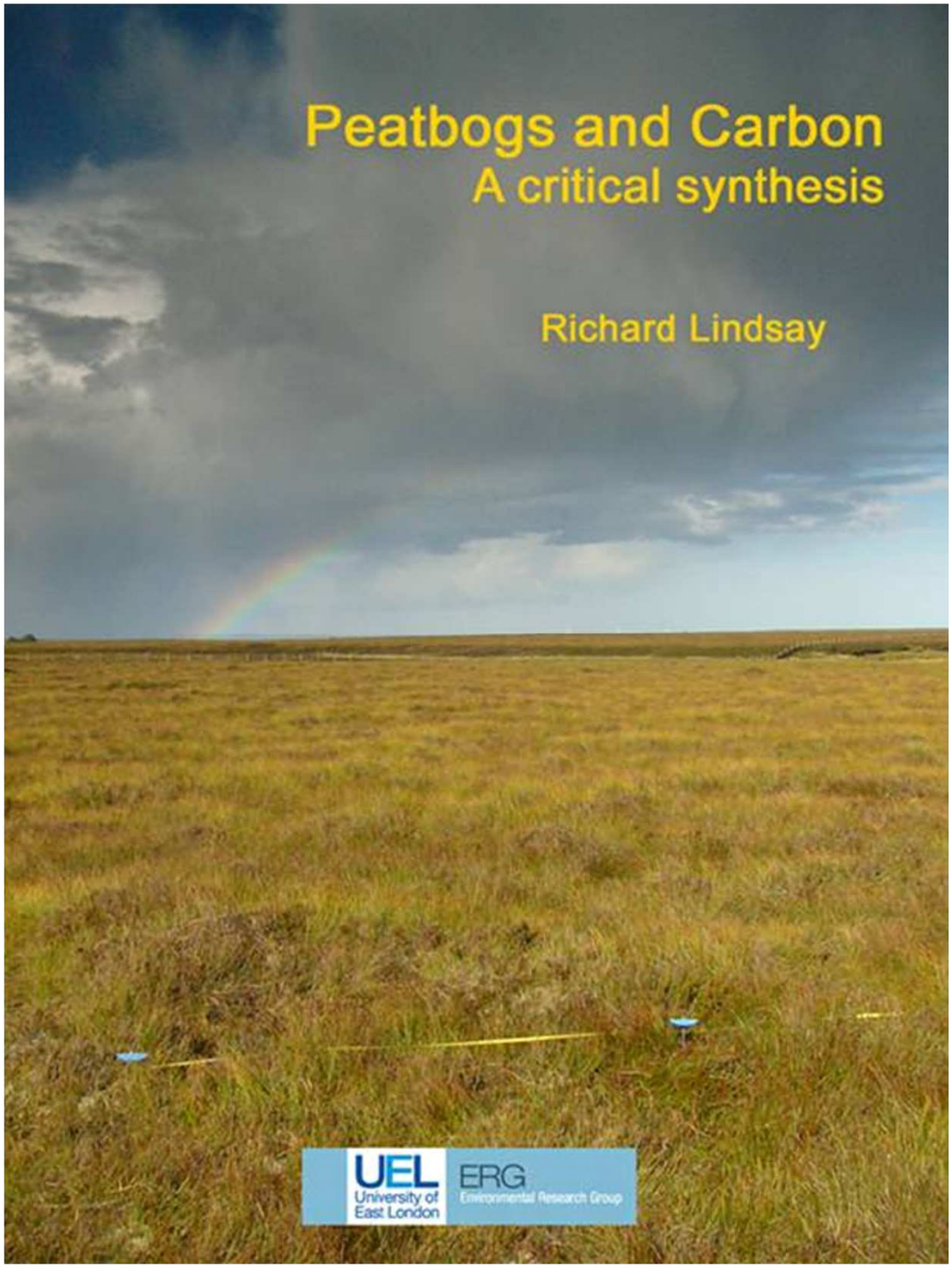
Richard Lindsay

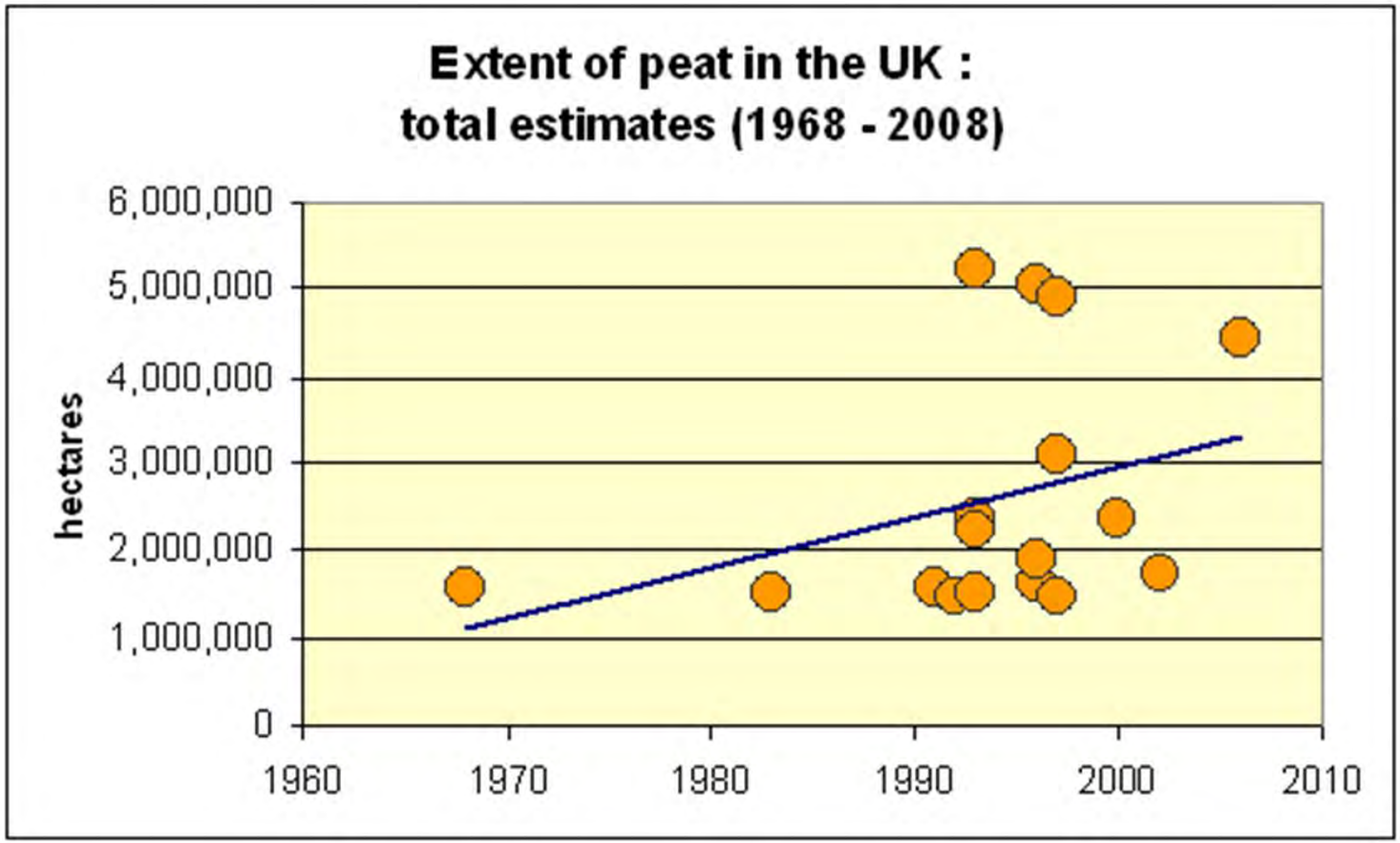
University of East London

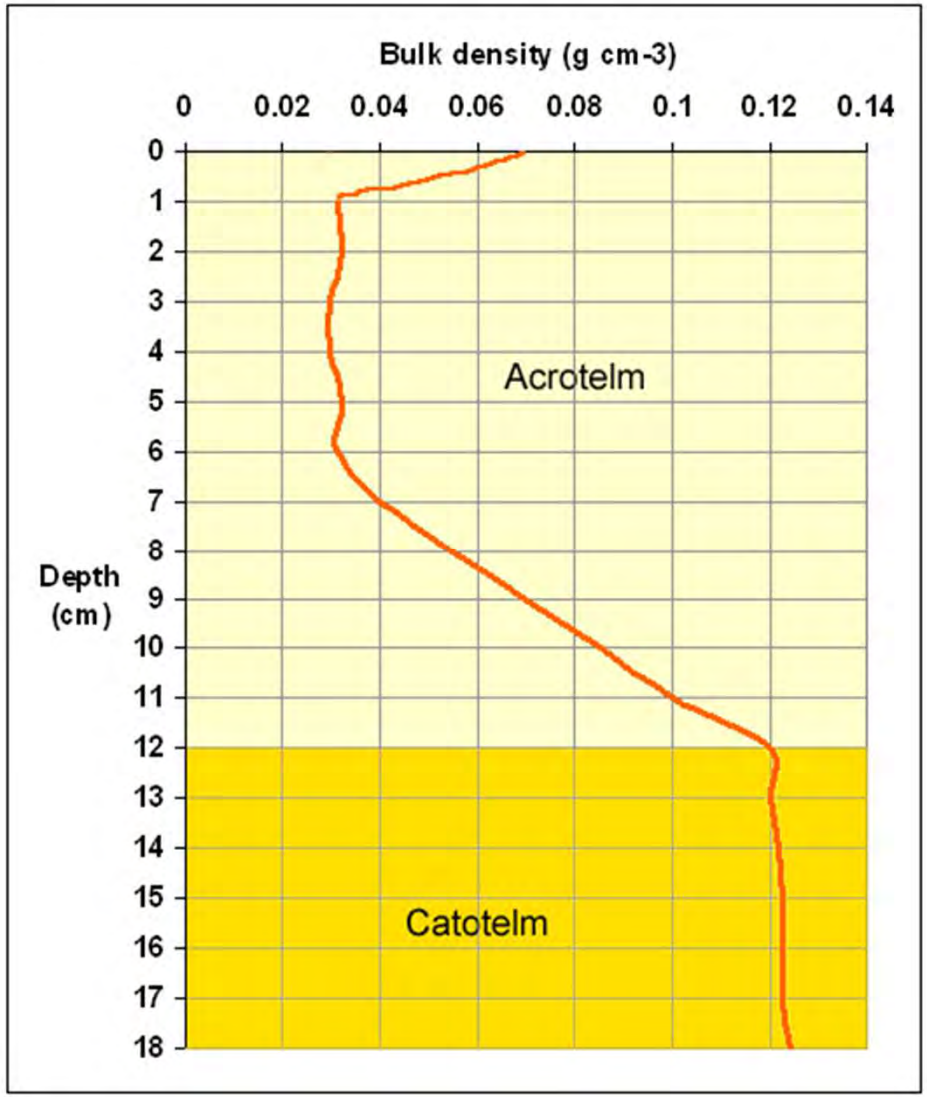
and

IUCN UK Peatland Programme

UEL University of East London ERG Environmental Research Group


Peatbogs and Carbon
A critical synthesis
Richard Lindsay
UEL
University of East London
ERG
Environmental Research Group


Extent of peat in the UK :
total estimates (1968 - 2008)
hectares
6,000,000
5,000,000
4,000,000
3,000,000
2,000,000
1,000,000
0
1960
1970
1980
1990
2000
2010


Bulk density (g cm-3)
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
Depth (cm)
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
Acrotelm
Catotelm

0 cm

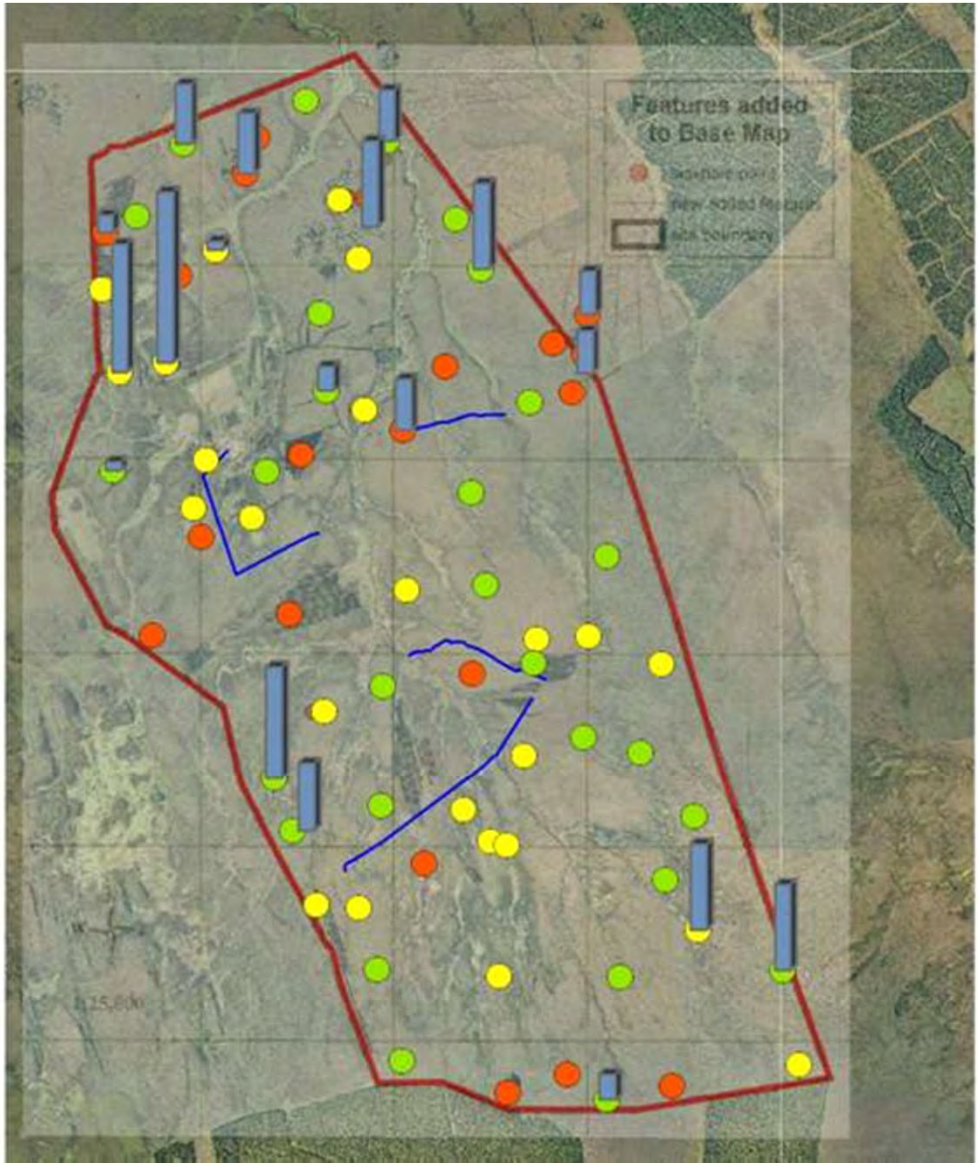
50 cm

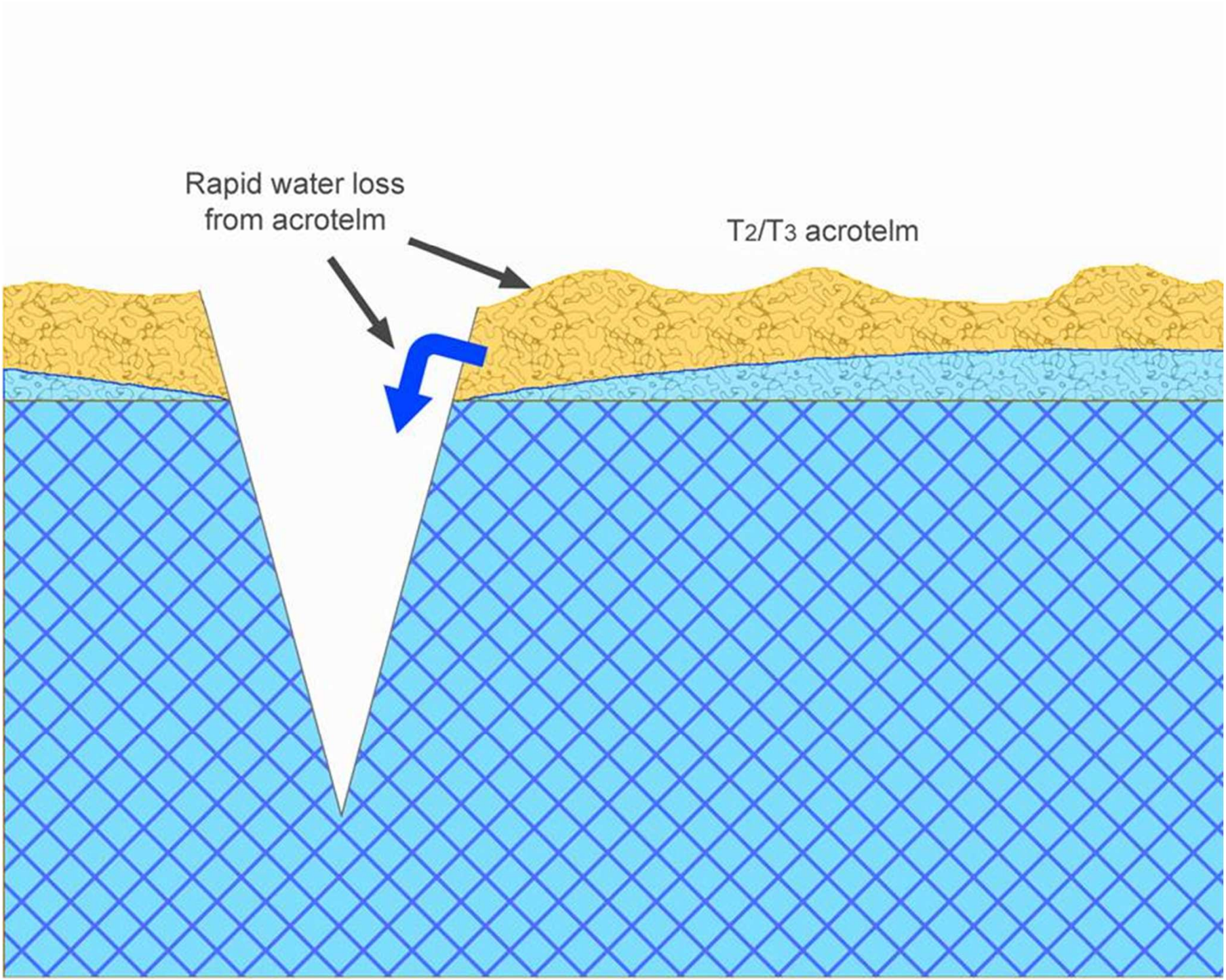
Peat core of 1 m length from Flower Scar Hill saddle mire

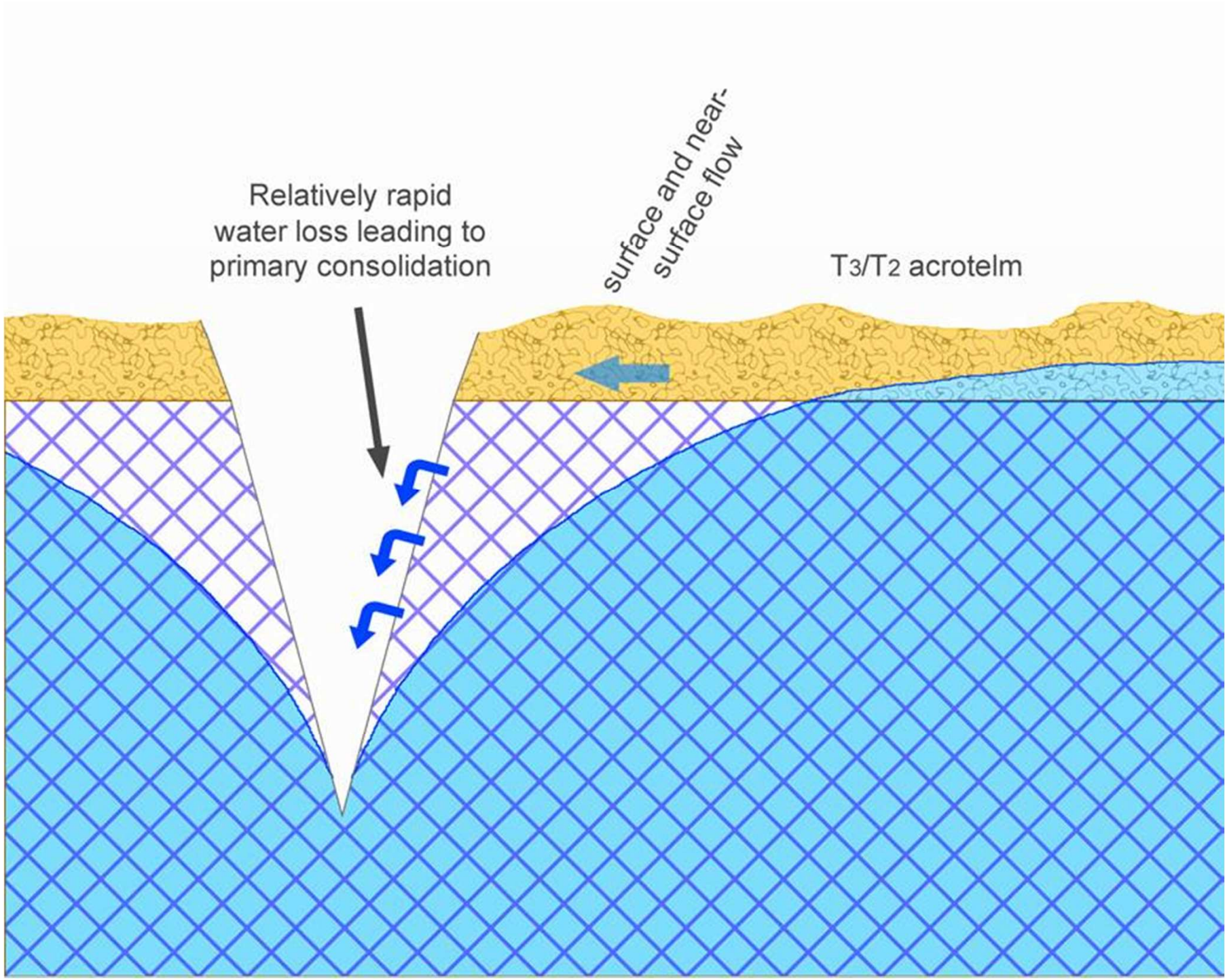
50 cm

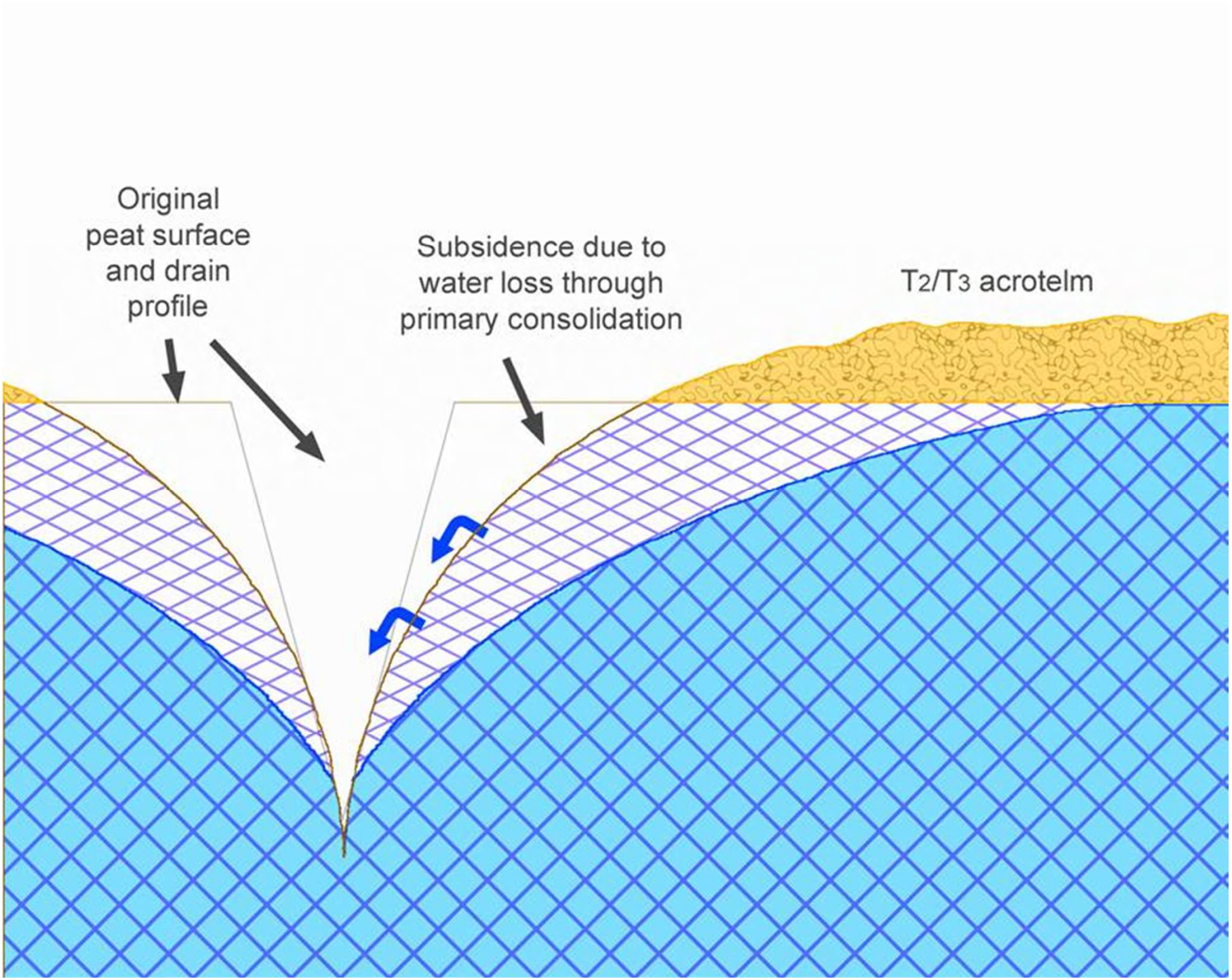
100 cm

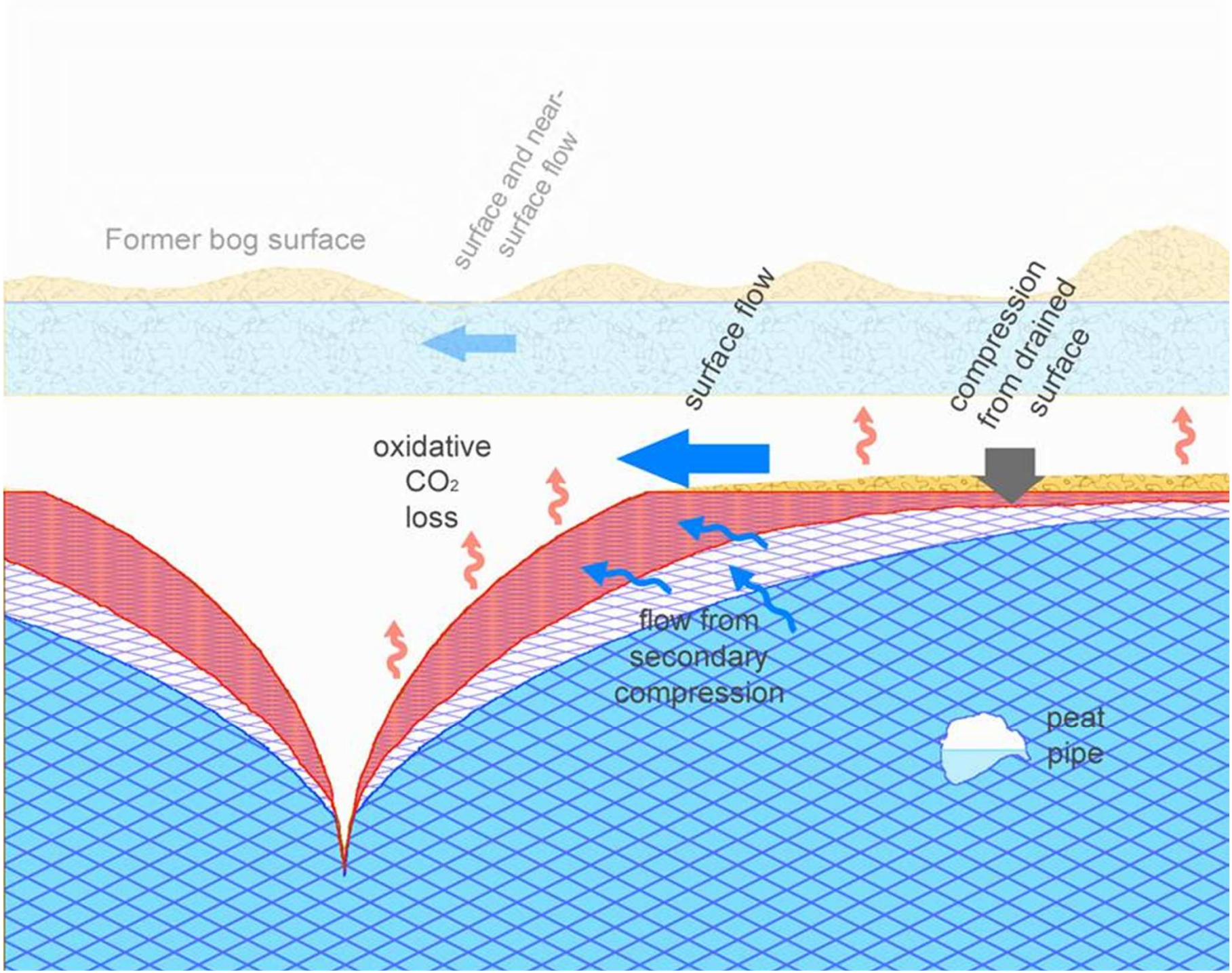

2m
20
2m
30

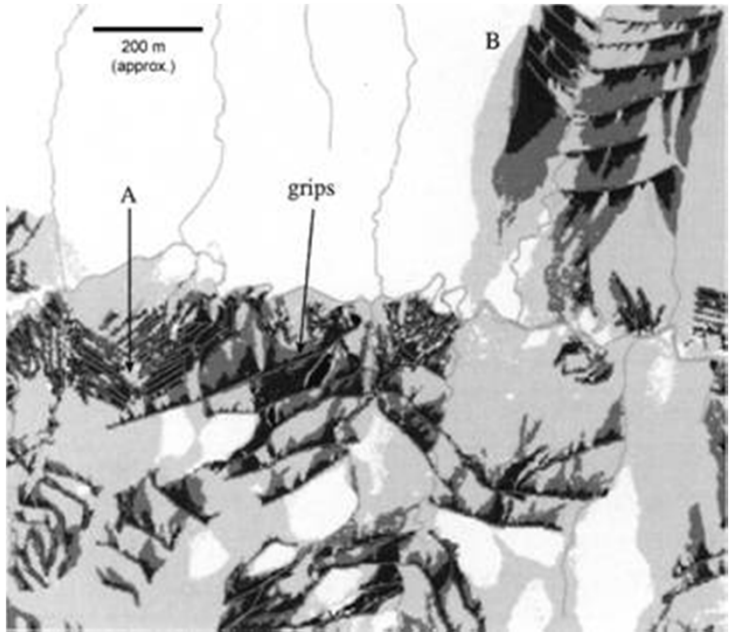

Features added
to Base Map

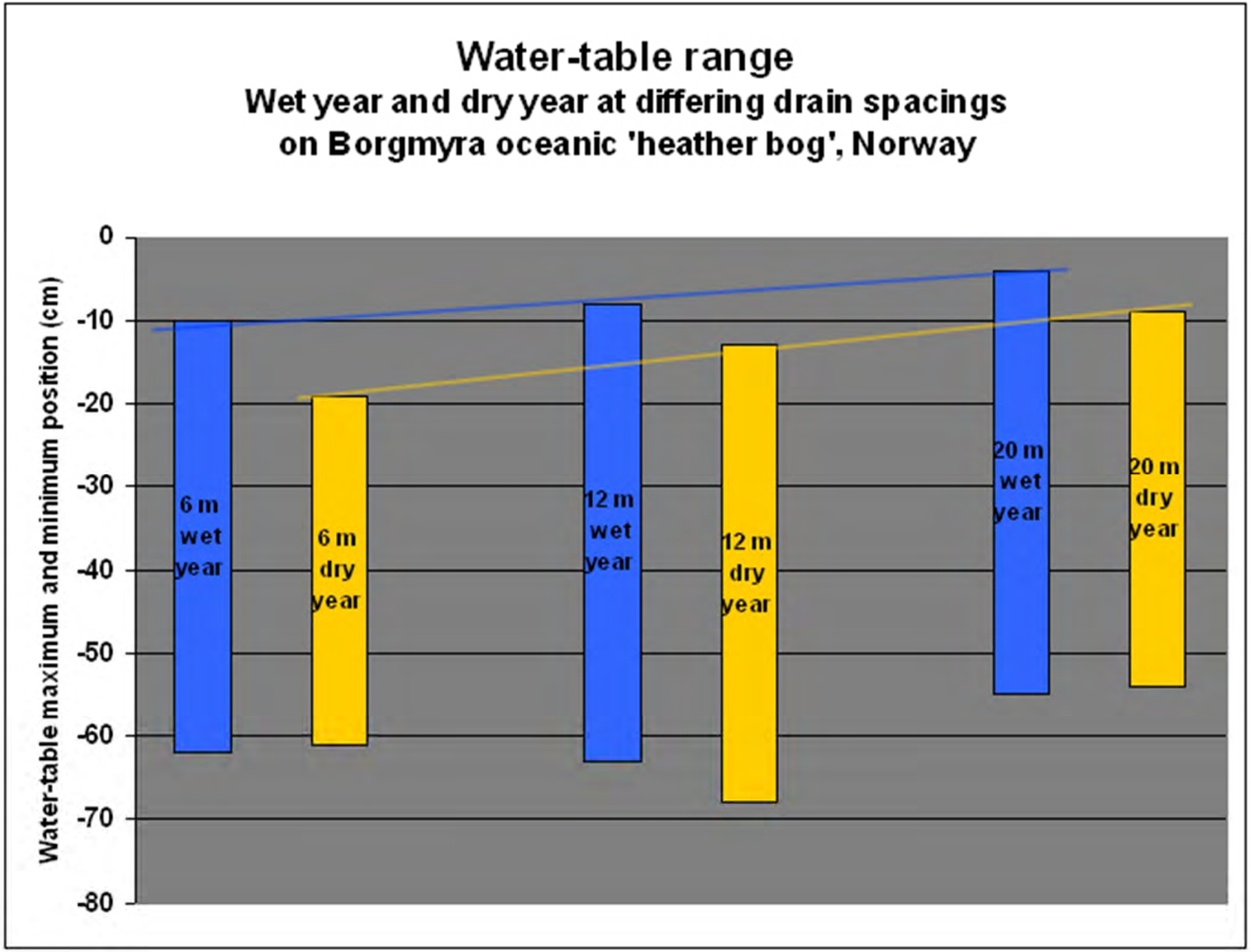

Rapid water loss
from acrotelm
T2/T3 acrotelm

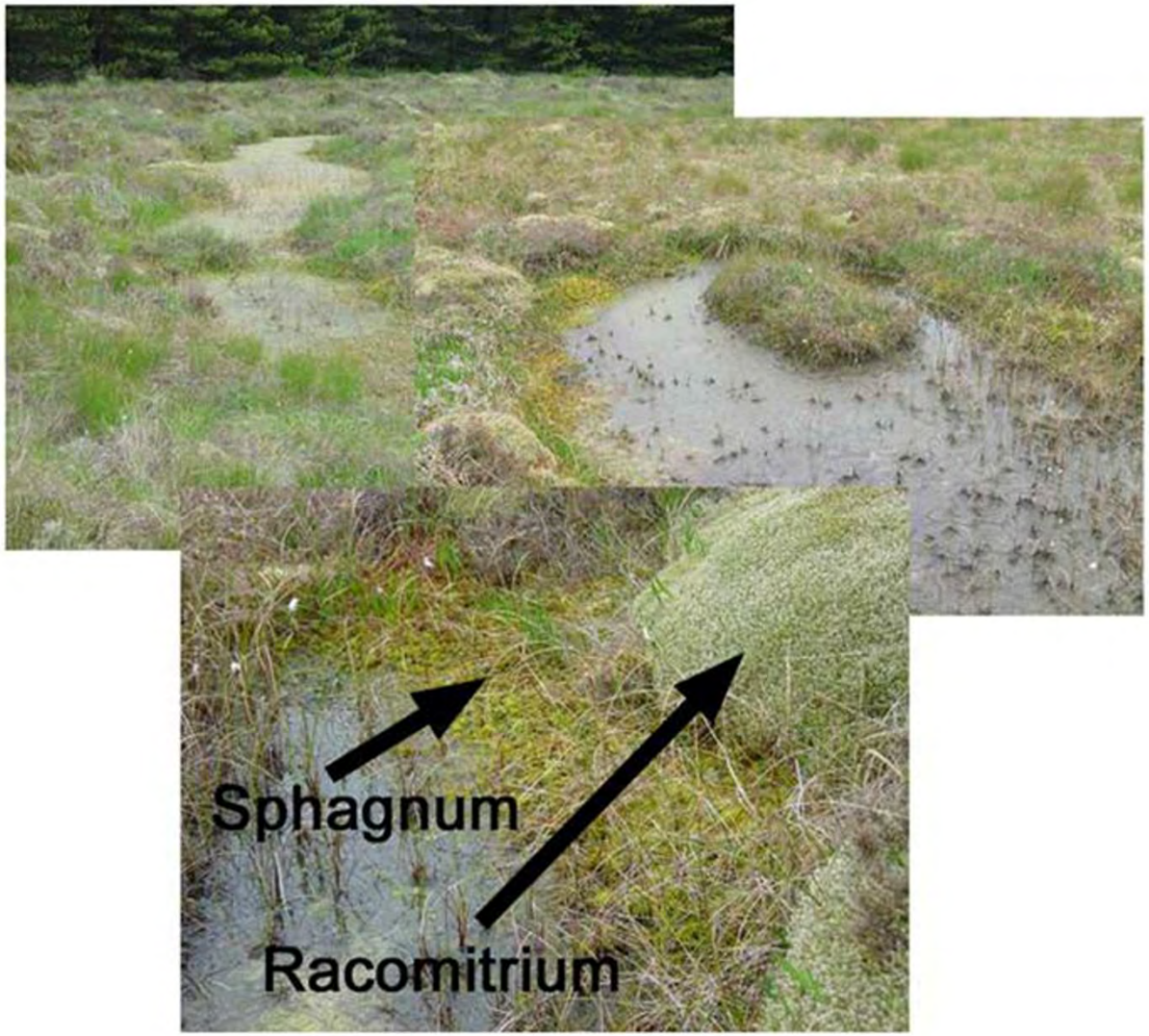

Relatively rapid
water loss leading to
primary consolidation
surface and near-
surface flow
T3/T2 acrotelm

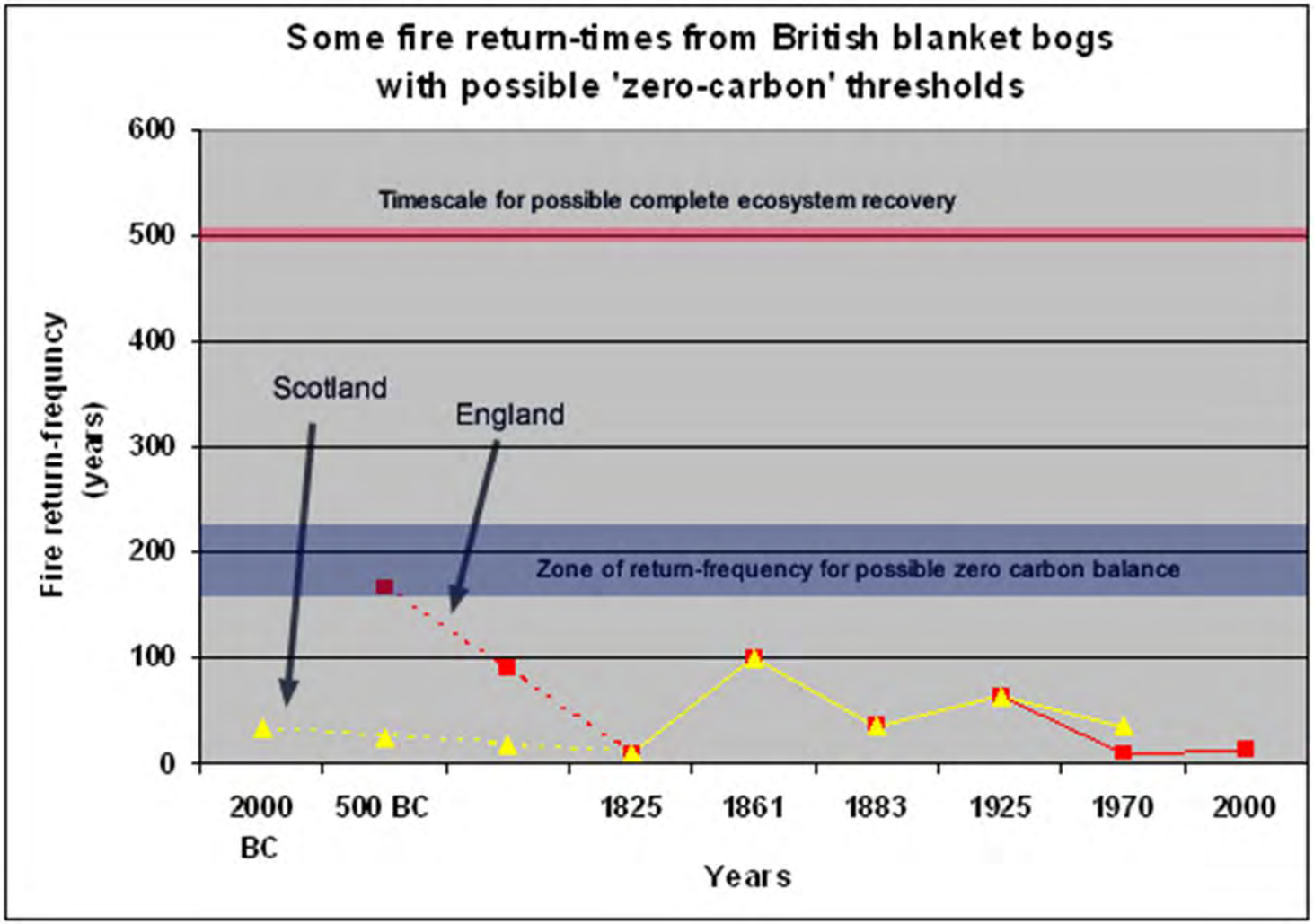

Original
peat surface
and drain
profile
Subsidence due to
water loss through
primary consolidation
T2/T3 acrotelm

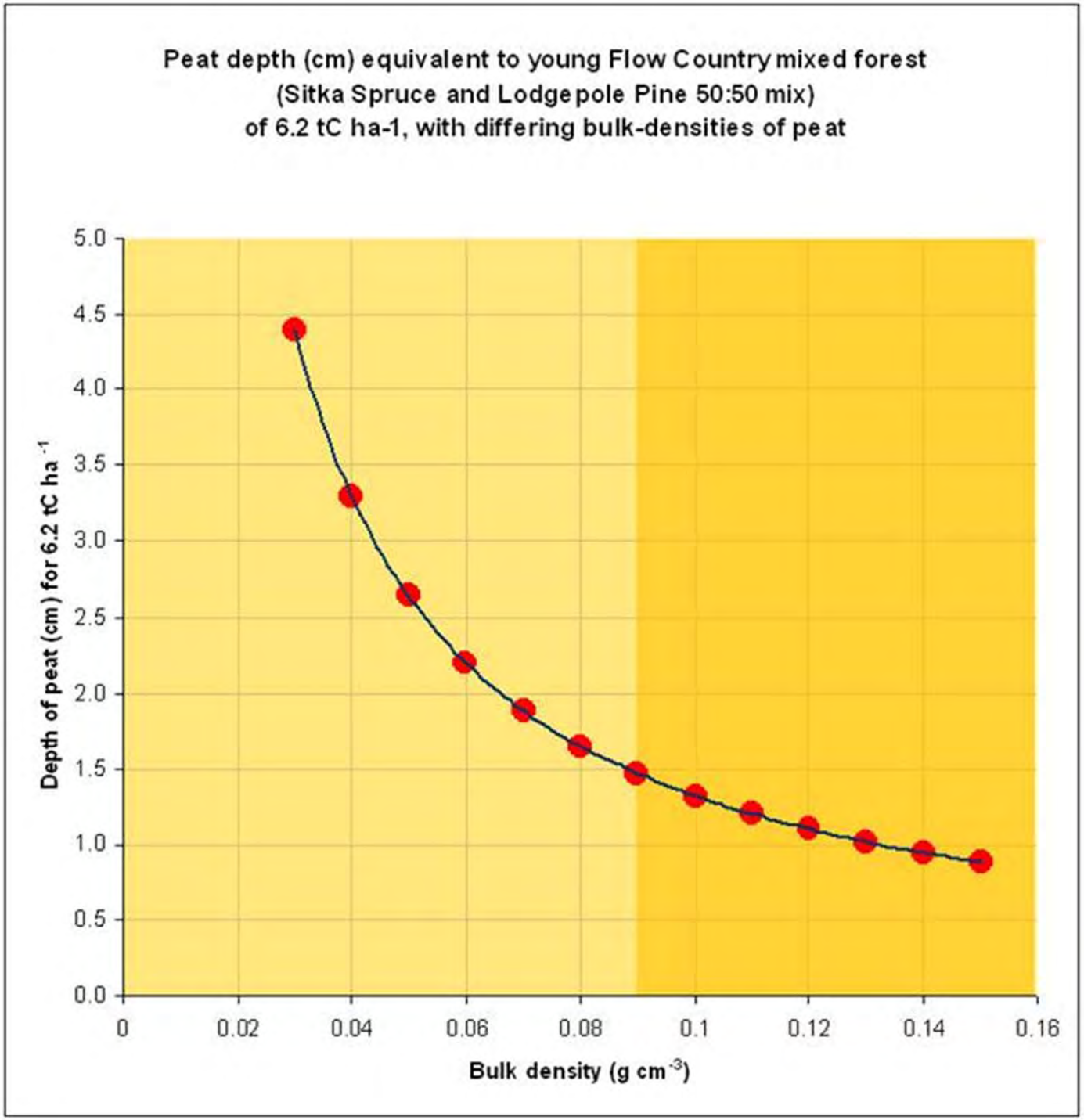

Former bog surface
surface and near-surface flow
surface flow
compression from drained surface
oxidative CO_2 loss
flow from secondary compression
peat pipe


200 m
(approx.)
A
grips
B


Water-table range
Wet year and dry year at differing drain spacings
on Borgmyra oceanic 'heather bog', Norway
Water-table maximum and minimum position (cm)
0
-10
-20
-30
-40
-50
-60
-70
-80
6 m wet year
6 m dry year
12 m wet year
12 m dry year
20 m wet year
20 m dry year

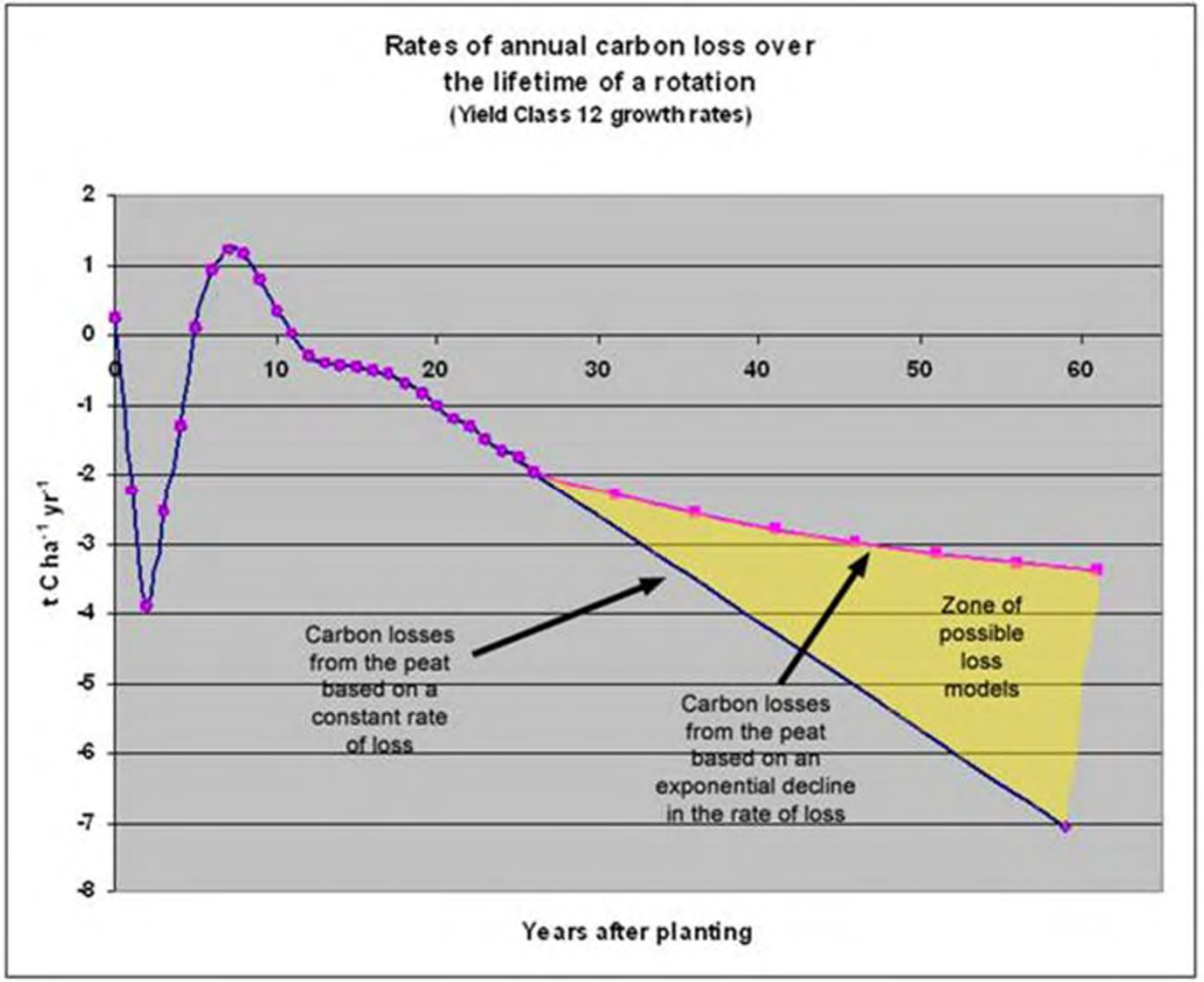

Sphagnum
Racomitrium

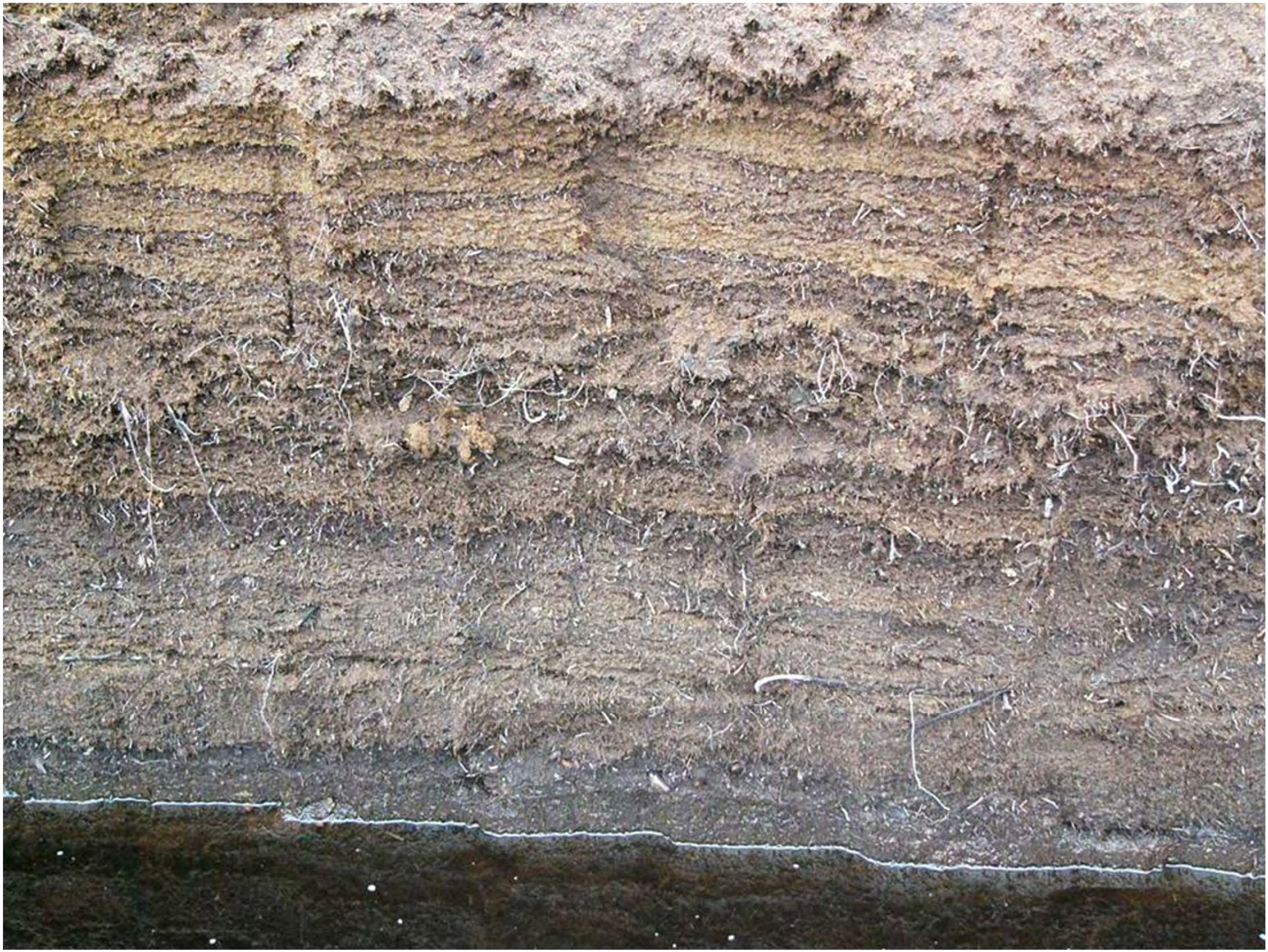

Some fire return-times from British blanket bogs
with possible 'zero-carbon' thresholds
Timescale for possible complete ecosystem recovery
Zone of return-frequency for possible zero carbon balance
Scotland
England
Fire return-frequency (years)
600
500
400
300
200
100
0
2000 BC
500 BC
1825
1861
1883
1925
1970
2000
Years


Peat depth (cm) equivalent to young Flow Country mixed forest
(Sitka Spruce and Lodgepole Pine 50:50 mix)
of 6.2 tC ha-1, with differing bulk-densities of peat
Depth of peat (cm) for 6.2 tC ha -1
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
Bulk density (g cm-3)

Forestry Work – A post LIFE era

Restoring Active Blanket Bog in North Scotland 2001- 2006: LIFE00NAT/UK/7075


Rates of annual carbon loss over
the lifetime of a rotation
(Yield Class 12 growth rates)
2
1
0
-1
-2
-3
-4
-5
-6
-7
-8
0
10
20
30
40
50
60
t C ha-1 yr-1
Carbon losses from the peat based on a constant rate of loss
Carbon losses from the peat based on an exponential decline in the rate of loss
Zone of possible loss models
Years after planting



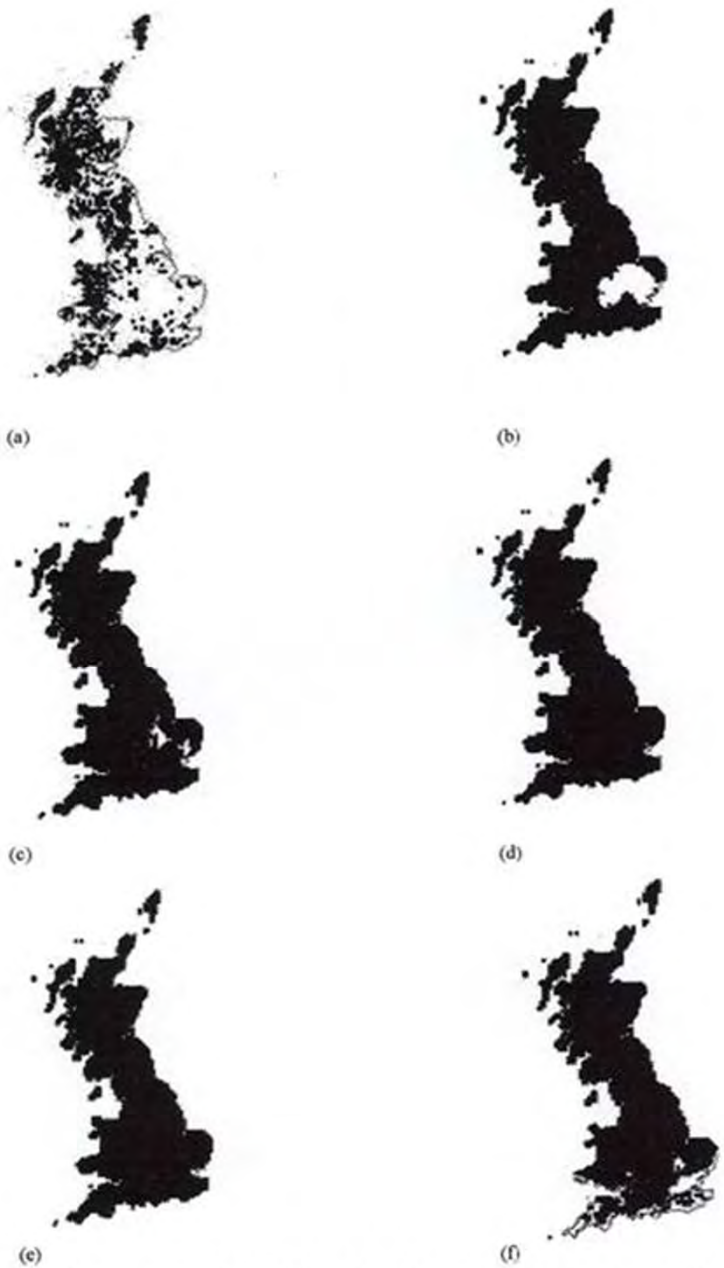
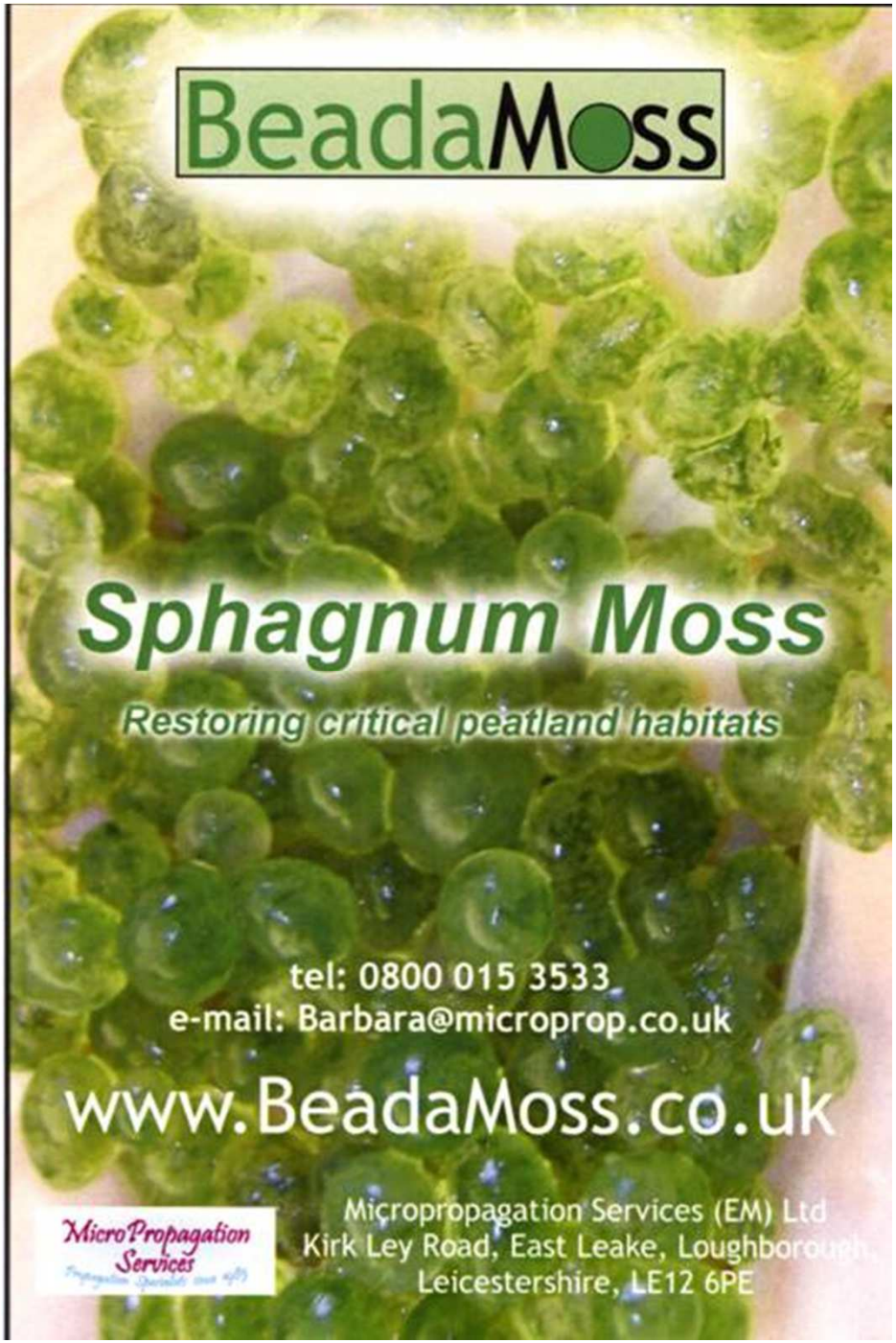


Figure 3.6 **SPECIESv1 model results for Sphagnum papillosum: (a) observed distribution; (b) current climate (1961-1990); (c) 2020s Low scenario; (d) 2020s High scenario; (e) 2050s Low scenario; (f) 2050s High scenario**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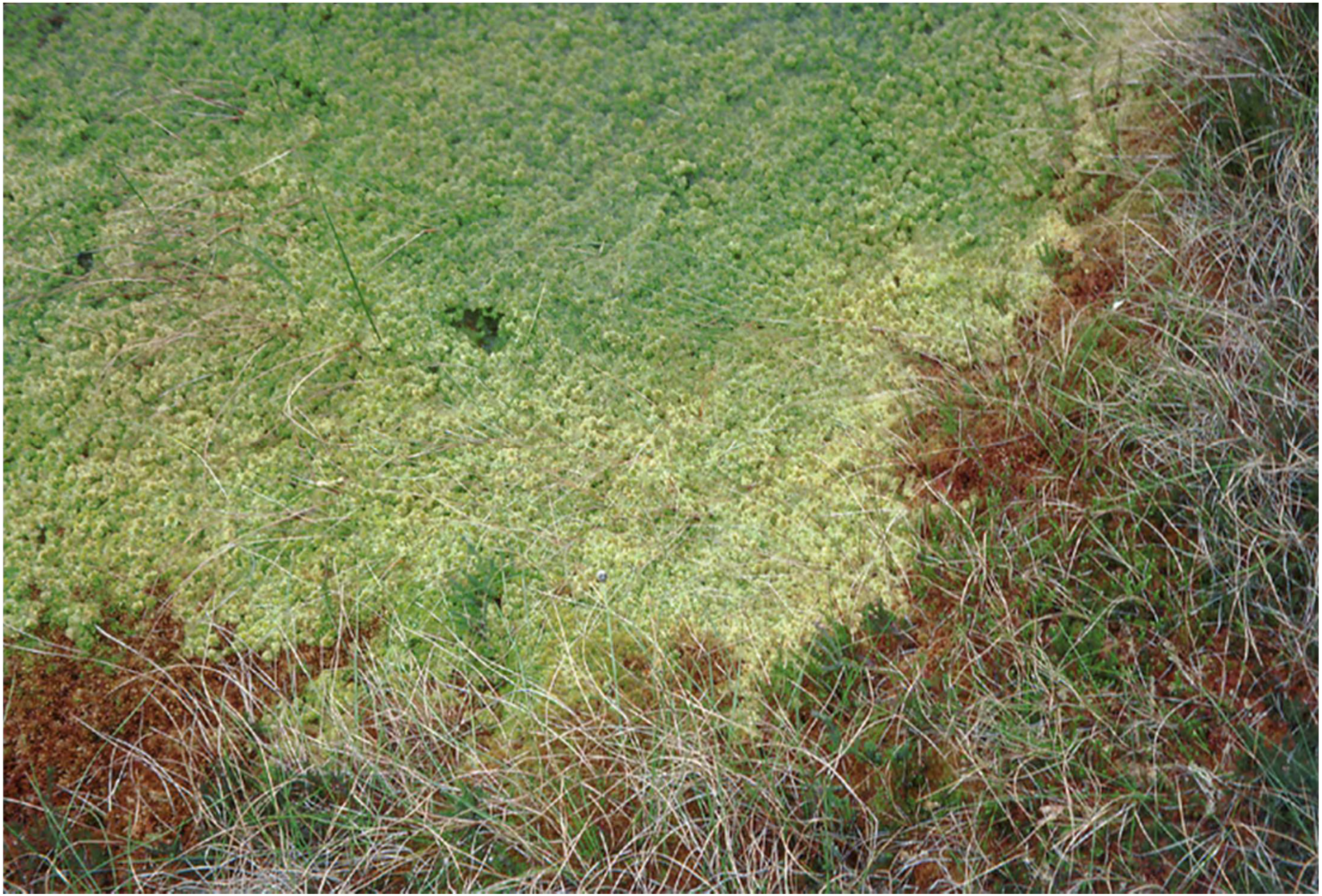
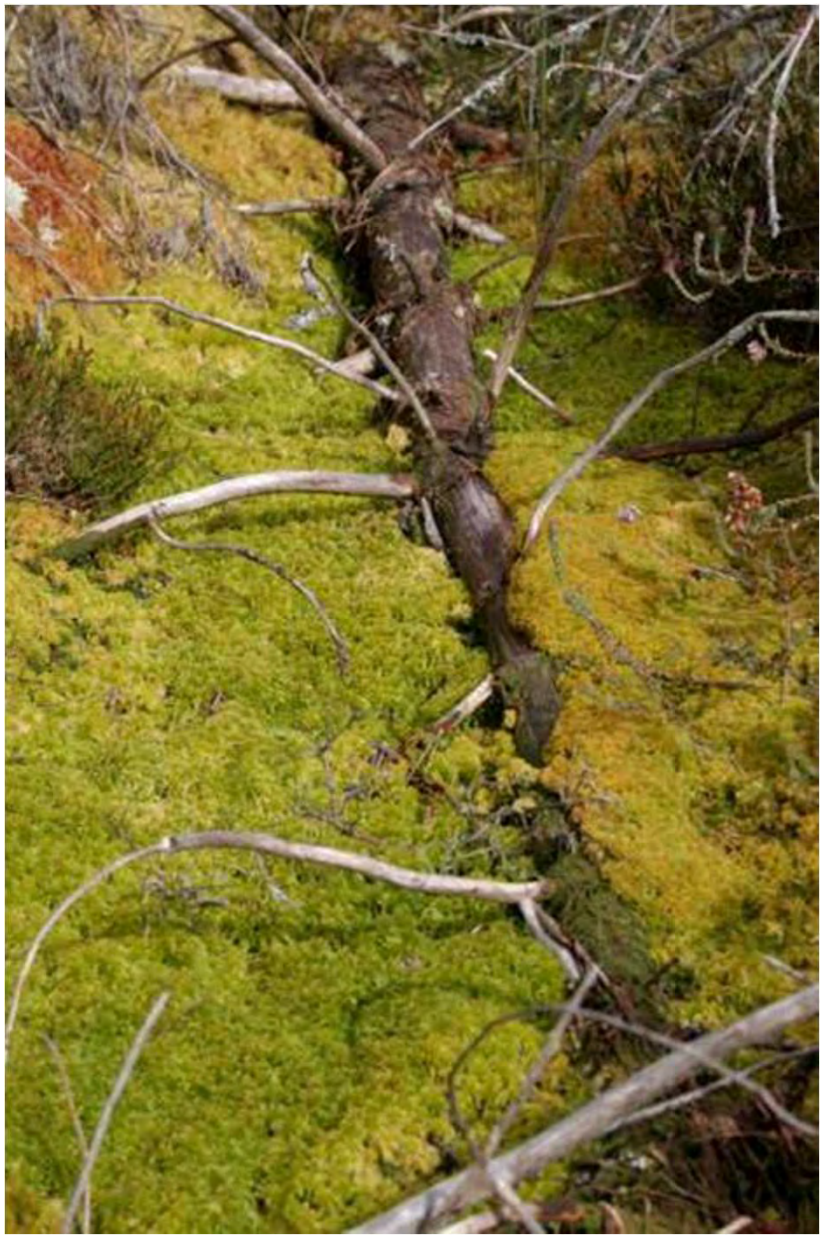
Sphagnum Moss
Restoring critical peatland habitats
tel: 0800 015 3533
e-mail: Barbara@microprop.co.uk
www.BeadaMoss.co.uk
MicroPropagation Services
Micropropagation Services (EM) Ltd
Kirk Ley Road, East Leake, Loughborough
Leicestershire, LE12 6PE


locked up carbon.
The Solution
The Aim
Thriving on open moor
Re-established blanket bog
Cotton Grass
Bilberry
BeadaMoss
Sphagnum fallax
SFMGW
MicroPropagation Services
COWBB
MP SPNOL


Sheet dam Balharn Hill after 13 years






COP10
AICHI-NAGOYA
Life in harmony, into the future
COP10/MOP5 AICHI-NAGOYA, JAPAN 2010
生物多様性交流フェア
国際会議場(COP10会場)南
〈10月11日(月・祝)~29日(金)〉
Interactive Fair for Biodiversity
South of Nagoya Congres Center
(COP 10 venue)
〈Monday 11- Friday 29 October〉
名古屋市
Nagoya
長久手町
Nagakute
地球いきものEXPO
in モリコロパーク
〈10月9日(土)~29日(金)〉
Biodiversity Expo in Moricoro Park
〈Saturday 9 - Friday 29 October〉
情報発信ステーション
in オアシス21
〈10月9日(土)~29日(金)〉
COP10 Information Dissemination
Station in Oasis 21
〈Saturday 9 - Friday 29 October〉
メッセナゴヤ2010
MESSE NAGOYA 2010
ようこそ 愛知・名古屋へ
Welcome to CBD COP10
COP-MOP5: 11-15 October COP10: 18-29 October

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Sunday: THE TIMES

Comment and news from Europe and the world, Pages 7-13

THE DAILY YOMIURI

COP10—Biodiversity

Genetic resource pact OK'd

COP10 delegates approve protocol on access, b

By Mikiko Miyakawa and Heather Howard
Daily Yomiuri Staff Writers

NAGOYA—Delegates from more than 190 countries adopted a protocol on access and benefit-sharing (ABS) of genetic resources early Saturday in Nagoya, following two weeks of strenuous meetings.

Participants gave a standing ovation to the chair of the meeting, Environment Minister Ryu Matsumoto, when the Nagoya Protocol and two other key documents were finally adopted at about 1:30 a.m. at the 10th Conference of the Parties to the Convention on Biological Diversity (COP10).

"Your wisdom, efforts, sweat and tears have been rewarded," said Matsumoto, who also served as COP10 president.

Participants also expressed satisfaction with the successful outcome: "It's important for the environment, for all ecological interests, and it is also important for the

The Yomiuri Shimbun

Environment Minister Ryu Matsumoto, left, shakes hands with Ahmed Djoghlaf, executive secretary of the Convention on Biological Diversity, after the Nagoya Protocol and two other key documents were adopted at about 1:30 a.m. Saturday at the 10th Conference of the Parties to the Convention on Biological Diversity in Nagoya.

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UN seals historic treaty to protect ecosystems

ALL THE NEWS WITHOUT FEAR OR FAVOR

The Japan Times

Sunday, October 31, 2010 4TH EDITIO

COP10 signs off on protocol

Pact reached on biodiversity, genetic assets

Nagoya
Geoengineering warning. Page 5

Delegates to the COP10 biodiversity conference concluded agreements early Saturday on access to genetic resources, preserving biodiversity over the next decade, and strategies to mobilize financial resources to meet these goals.

The Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits (ABS) was COP10's keystone agreement, to which all other issues were linked.

Under the new protocol, 193 parties to the Convention on Biological Diversity, which sponsored COP10, will be legally obliged to follow rules designed to prevent biopiracy and provide benefits, including financial ones, to other parties when their genetic resources are accessed.

Applause and cheers filled the Plenary Session Hall early Saturday morning as attend-

Nailed it: Environment Minister Ryu Matsumoto raises the hammer to end the COP10 conference in Nagoya on Saturday.

Deal called biggest since '97 Kyoto pact

ANALYSIS

Eric Johnston
STAFF WRITER
Nagoya

Nearly two decades after its creation, the United Nations Convention on Biological Diversity has finally realized one of its main goals.

The Nagoya Protocol, approved early Saturday morning at COP10, formalizes rules for achieving the CBD's third objective, which is the fair sharing of benefits from genetic resources.

Adoption of the protocol is being hailed by delegates and nongovernmental organizations as one of the most important measures the world has ever taken against biopiracy, and the most important U.N. environmental agreement since the 1997 Kyoto Protocol.

Despite being couched in highly bureaucratic legal language, the Nagoya Protocol has the potential to affect is-

turned to the people whose knowledge made their development possible.

Under the Nagoya Protocol, access to genetic resources shall be subject to prior informed consent by the party that provides such resources. In addition, parties to the protocol are required to take appropriate measures in accordance with their domestic laws to ensure prior, informed consent or approval and involvement of indigenous and local communities is obtained for access to those resources.

In a separate section in the protocol on traditional knowledge, parties must establish ways to inform potential users of traditional knowledge associated with genetic resources about their obligations.

"The Nagoya Protocol is a crucial legal document that will help determine how we will deal with genetic resources. It creates a new balance, providing a fairness that was, until now, missing. ... It of-

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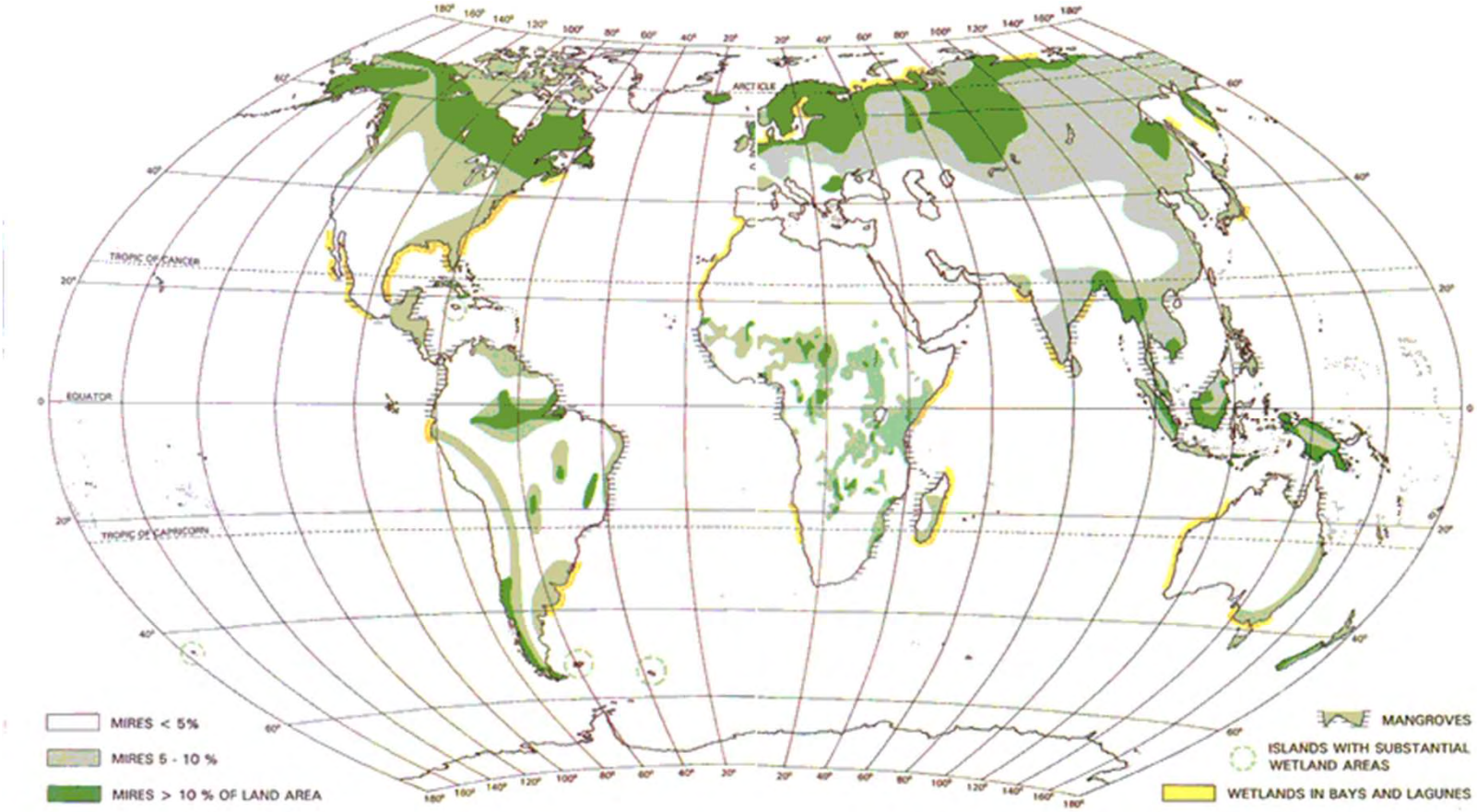

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IUCN UK Committee

Peatland Programme

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About Us

The IUCN UK Peatland Programme exists to promote peatland restoration in the UK and advocates the multiple benefits of peatlands through partnerships, strong science, sound policy and effective practice. The work of the Peatland Programme is overseen by a coalition of environmental bodies including the John Muir Trust, Scottish Wildlife Trust, Yorkshire Wildlife Trust, RSPB, North Pennines AONB Partnership, Moors for the Future and the University of East London.

Restoration

There are global calls for urgent action to restore damaged peatlands to stop carbon loss and benefit from the ecosystem services of a healthy peatland.

View

Climate Change

The UK's damaged peatlands emit 10 million tonnes of CO2 into the atmosphere yearly. Restoring peatlands provides a cost effective means of reducing emissions.

View

start | Microsoft PowerPoint ... | Peatland Programme ... | 00:59

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