Peatland & restoration; an introduction

Simon Thorp

Director, Scotland's Moorland Forum

Scotland's MOORLAND FORUM

Introduction

The Approach

Some (Big) Numbers

- Worldwide, peatlands cover an estimated area of 400 million hectares
  - Equivalent to 3% of the Earth's land surface.
- Peatlands hold twice the carbon stored in world's forests
- Damaged peatlands emitting 6% of global carbon dioxide emissions.

- Deep peatlands in the UK cover 2.7 million hectares
- Scotland:
  - over 60% of UK area, or 1.6 million hectares.
  - Scottish peat amounts to about 3 billion tonnes

The Starting Point
‘More than just a bog’

Development of thinking about bogs

- Starting Point
  - Peatland, wasteland
  - Draining or forestry
- Climate change
  - Driven by carbon
  - Where are the stocks of carbon?
- Different types of bog
  - everyone's vision can be different

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Introduction to Peatland Management

Clifton Bain

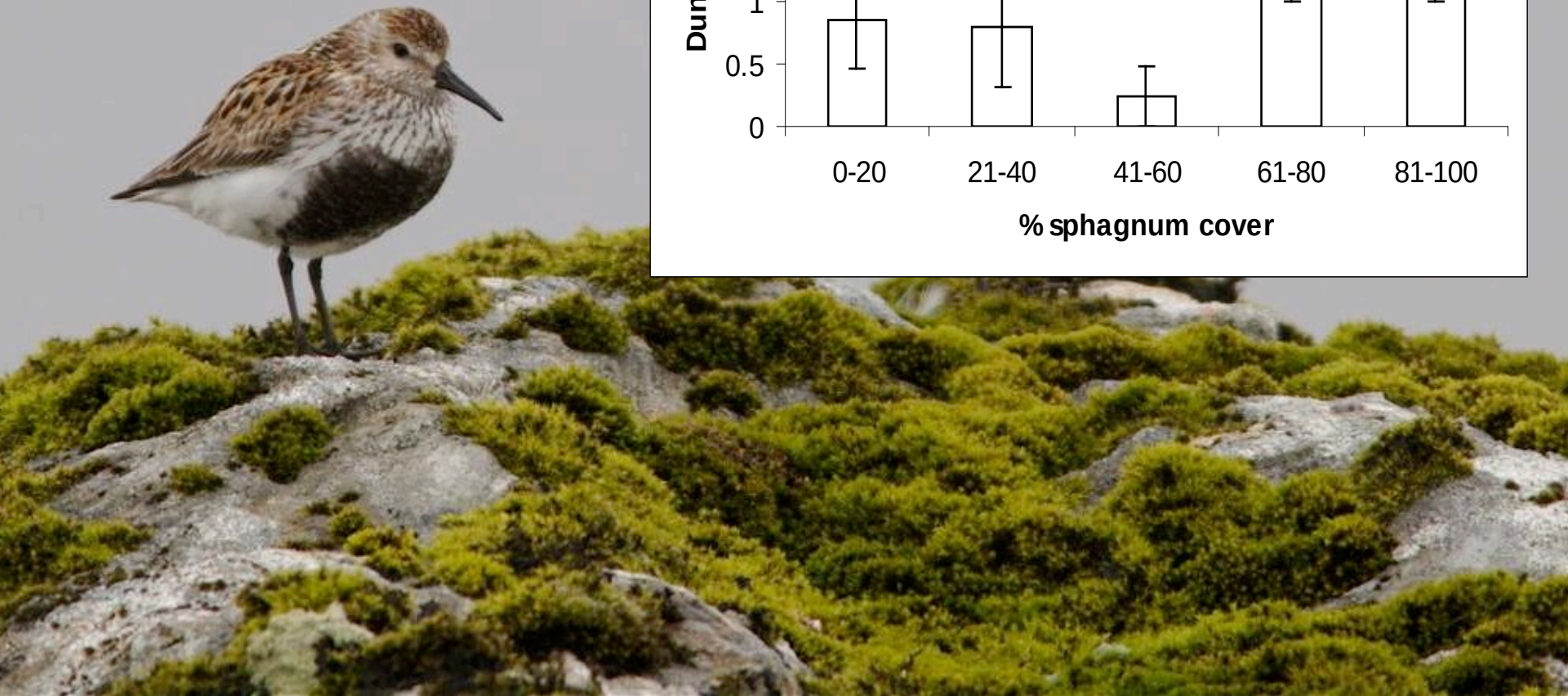
Director, IUCN UK Peatland Programme

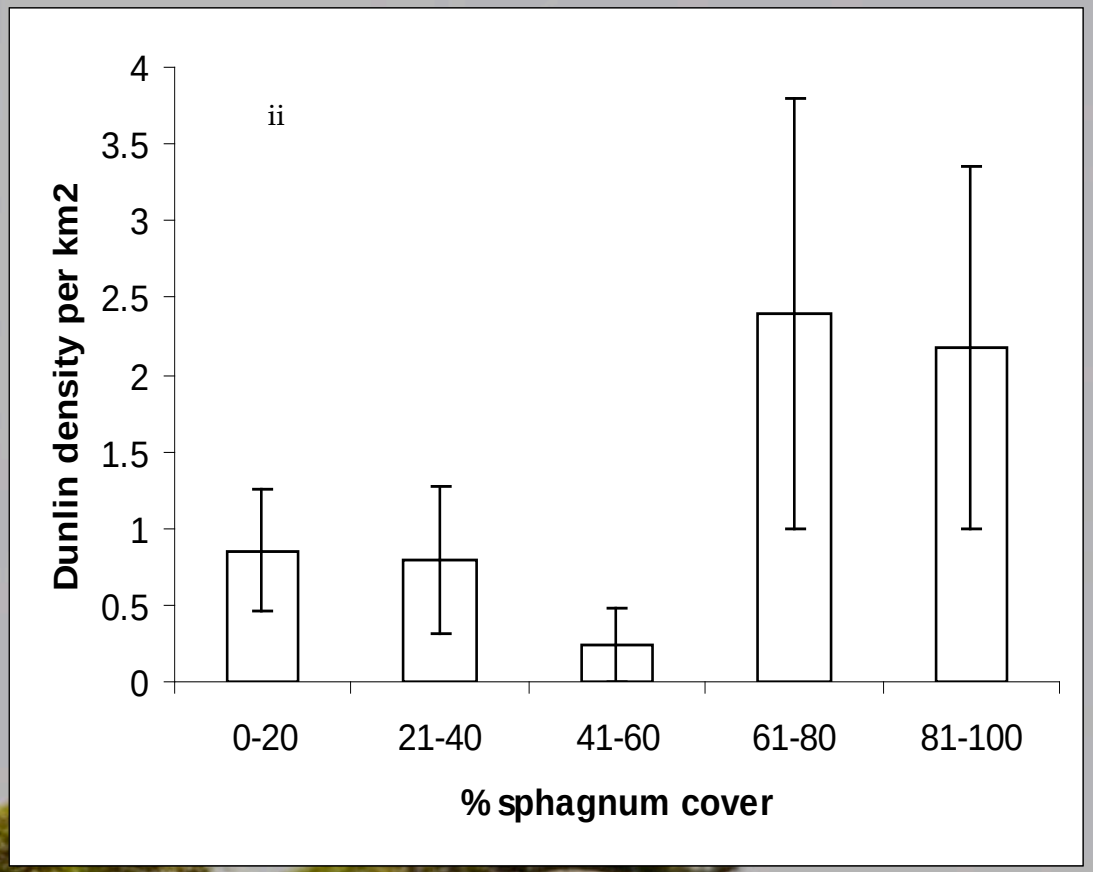
Ecosystem Services from Peatlands

- Biodiversity
- Carbon Storage
- Water Supply
- Environmental Archive
- Recreation
- Agriculture

Photo: Robert Clark

Biodiversity





Water Quality and Flood Alleviation

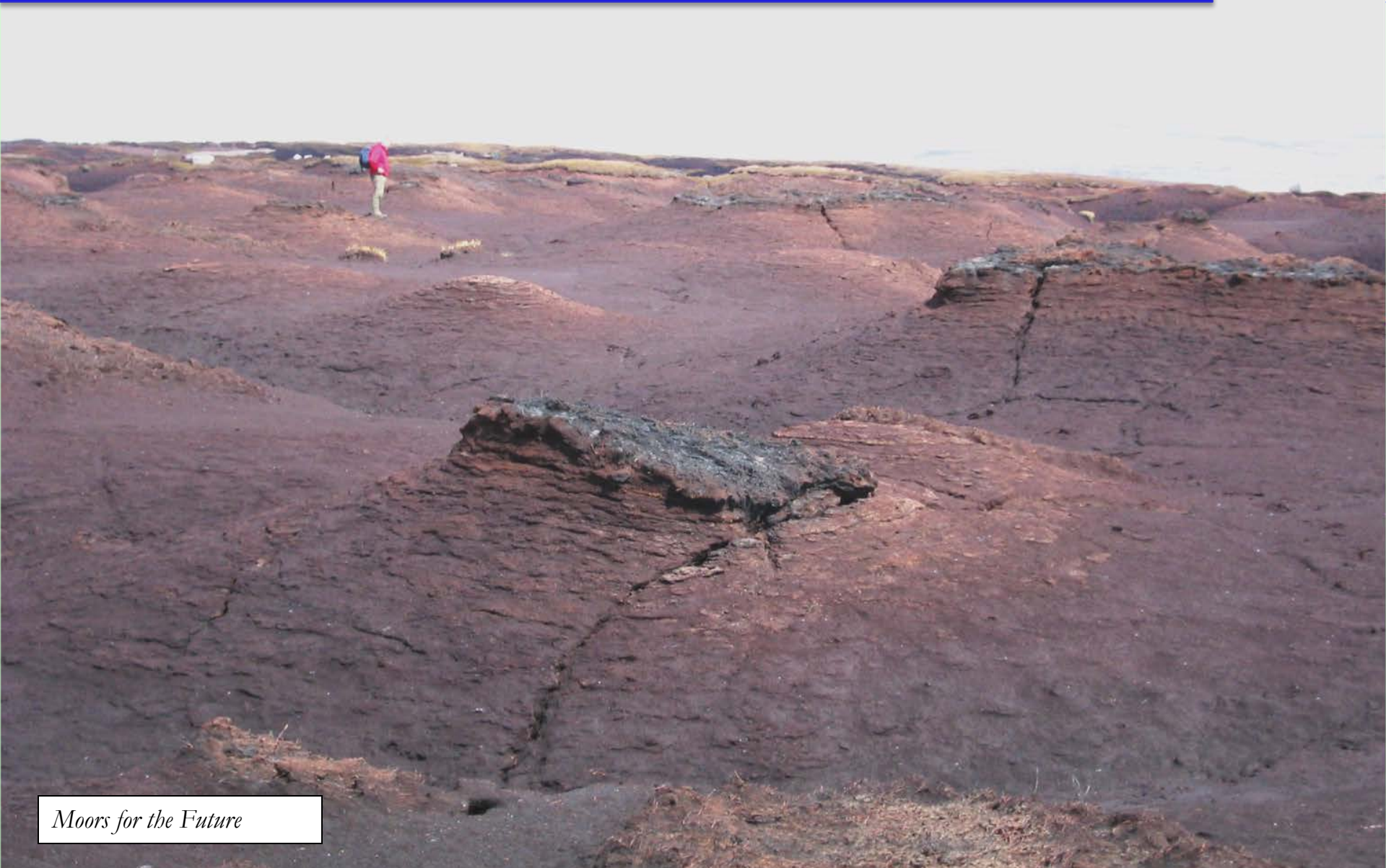
In the past peatlands regarded as valuable only when turned into something else.

True peatland values not appreciated.

Less than 20% of UK peatlands are undamaged.

Erosion

‘Bare Peat’



Moors for the Future

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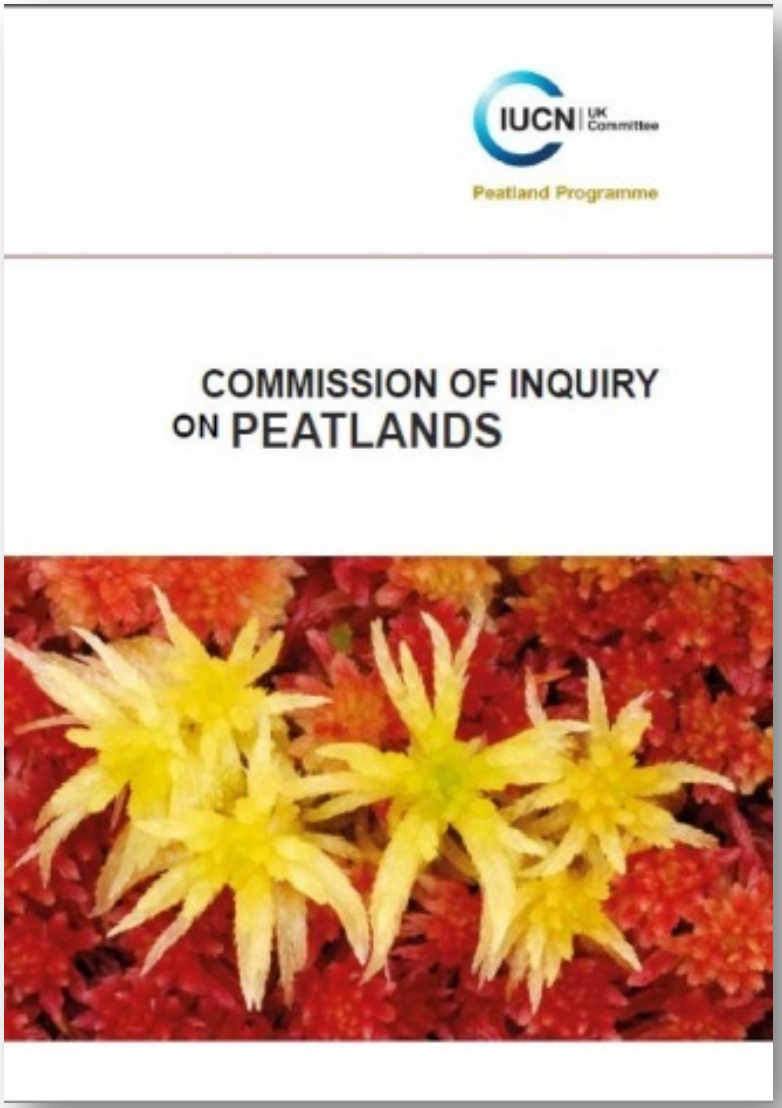

Land Managers Eve

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Field guide to *Sphagnum* mosses in bogs

Introduction. This guide aims to introduce some of the more typical bog species, designed for people who have no previous knowledge of the subject. First look at the diagram showing the main parts of a *Sphagnum* plant on the back of this guide. Then look at the photos, text and colour charts of each species to check the key features against those found on your plant. This guide does not cover all *Sphagnum* species in the UK and is not designed for use by surveyors. For more accurate identification a hand lens or microscope is needed.

Using colour to recognise *Sphagnum* species. Most species vary in colour. Typical colours for each species are shown in the colour charts on the left hand side of each species box, with the most common colours at the top. When growing in shade all species tend to be green. When dried out, green species may look bleached and red species may look brown. Lift a single shoot up to see the true colour below. All species can be darker when waterlogged.

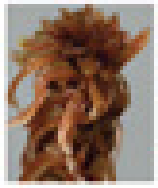
Sphagnum capillifolium

- Forms hummocks or carpets, or in small patches. Capitulum often like a pom-pom.
- Dark wine-red to green. Other similar red species occur. Common in many habitats.
- An important peat-forming species, but more tolerant of drying than *S. papillosum* and *S. magellanicum*.

Sphagnum subnitens

- Similar size and shape to *S. capillifolium*. Loose hummocks or small patches.
- Brick-red or salmon pink to green. Centre of capitulum often green with red 'halo' around edges.
- In several habitats, but not usually abundant in bogs in good condition.

Sphagnum fuscum



- Similar size and shape to *S. capillifolium*. Forms hummocks.
- Brown like ginger biscuit or nicotine. No red.
- In wet bogs or at high altitudes. Very rare in England and Wales. Occasional in Scotland.
- An important peat-forming species in northern countries.

red or brown

Small and thin *Sphagnum* species

FSC

Sphagnum building blocks

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Demonstrating Success
UK Peatland Restoration

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- 24 case studies
- NGOs, business, agencies
- blanket bog, raised bog, fen

2020 Land Use & Forestry Sub-Group

Scotland's 2020 Climate Group

Land Use & Forestry Sub-Group

Peatland Conservation: a Global Priority and a UK Opportunity

Blanket bog in the Flow Country, Caithness

Introduction

This paper sets out the opportunity that exists to enhance the ability of the UK's peatland resources to capture and store carbon from the atmosphere for long-periods.

New investment is sought to deliver a major environmental legacy by:

- fulfilling the potential for peatlands to make a significant contribution to national climate change targets, while bringing wider environmental benefits for wildlife;
- improving our scientific understanding of peatlands and the benefits they provide for carbon, biodiversity and water; and
- developing carbon markets to provide additional long term funding for urgently needed peatland restoration and conservation.

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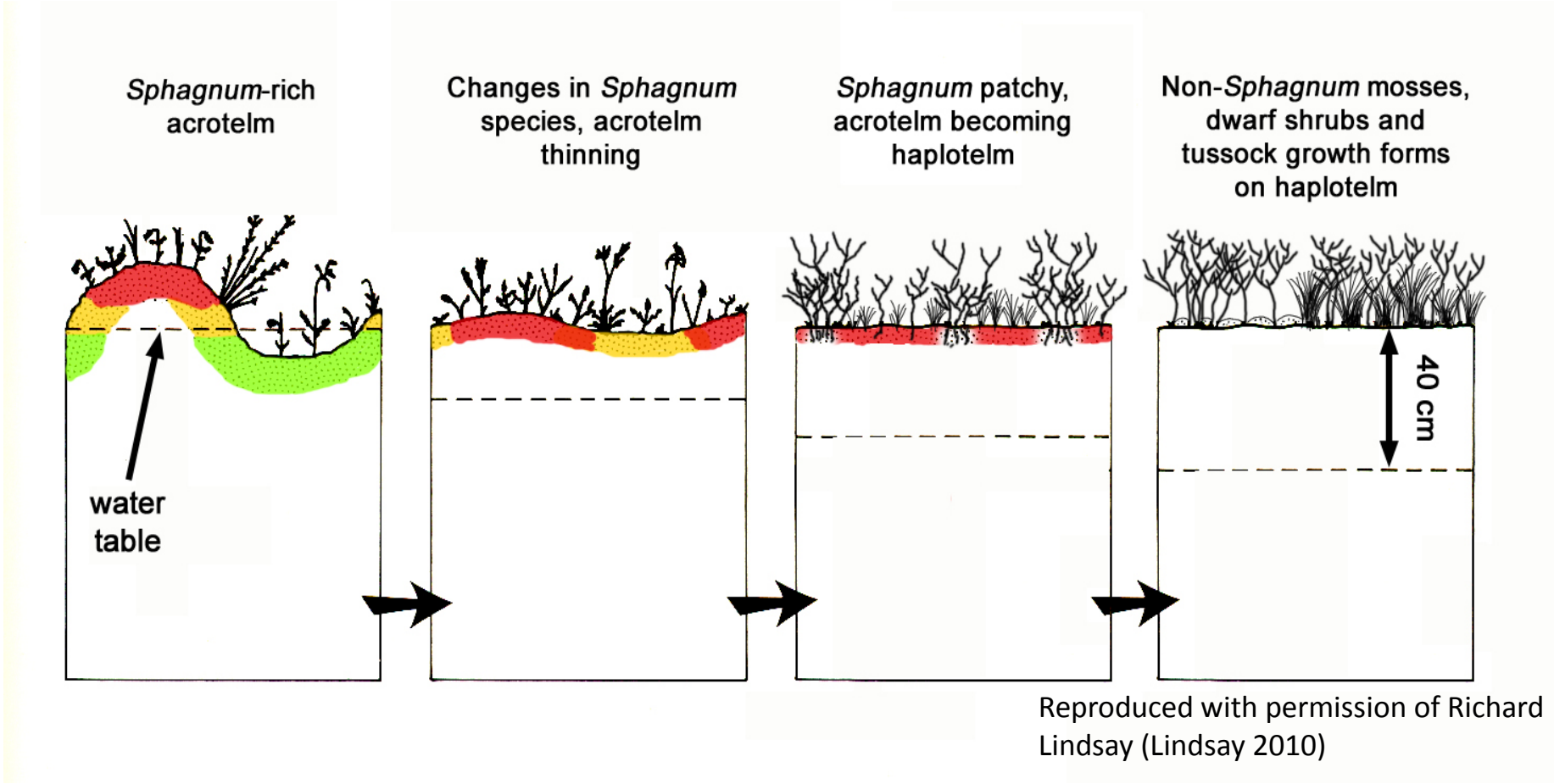
Mechanisms

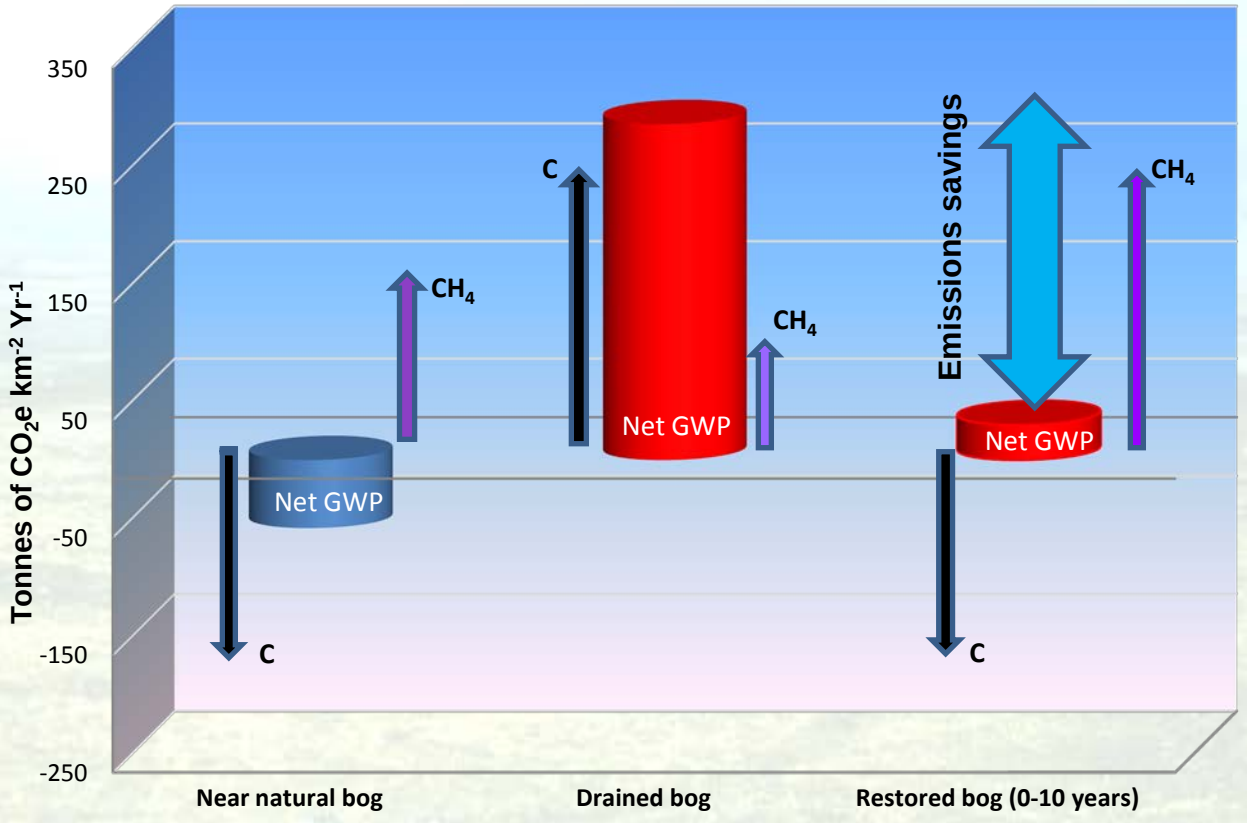
Typical Degradation Following the Drainage of a Peatland

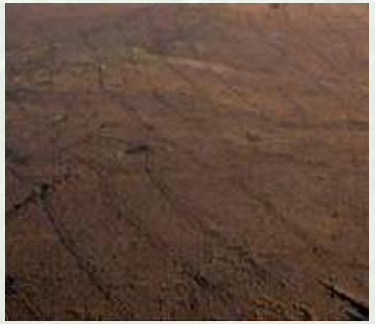


Reproduced with permission of Richard Lindsay (Lindsay 2010)

Effects of a lowering water table on vegetation. Pool and hummock structure of an intact active peat bog. Drawn down of water with loss of pool. Increase in dwarf shrubs and grasses. Loss of *Sphagnum* and functioning acrotelm layer

Global Warming Potential of Peat Bogs





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Restoration

The UK has world leading expertise in peatland restoration

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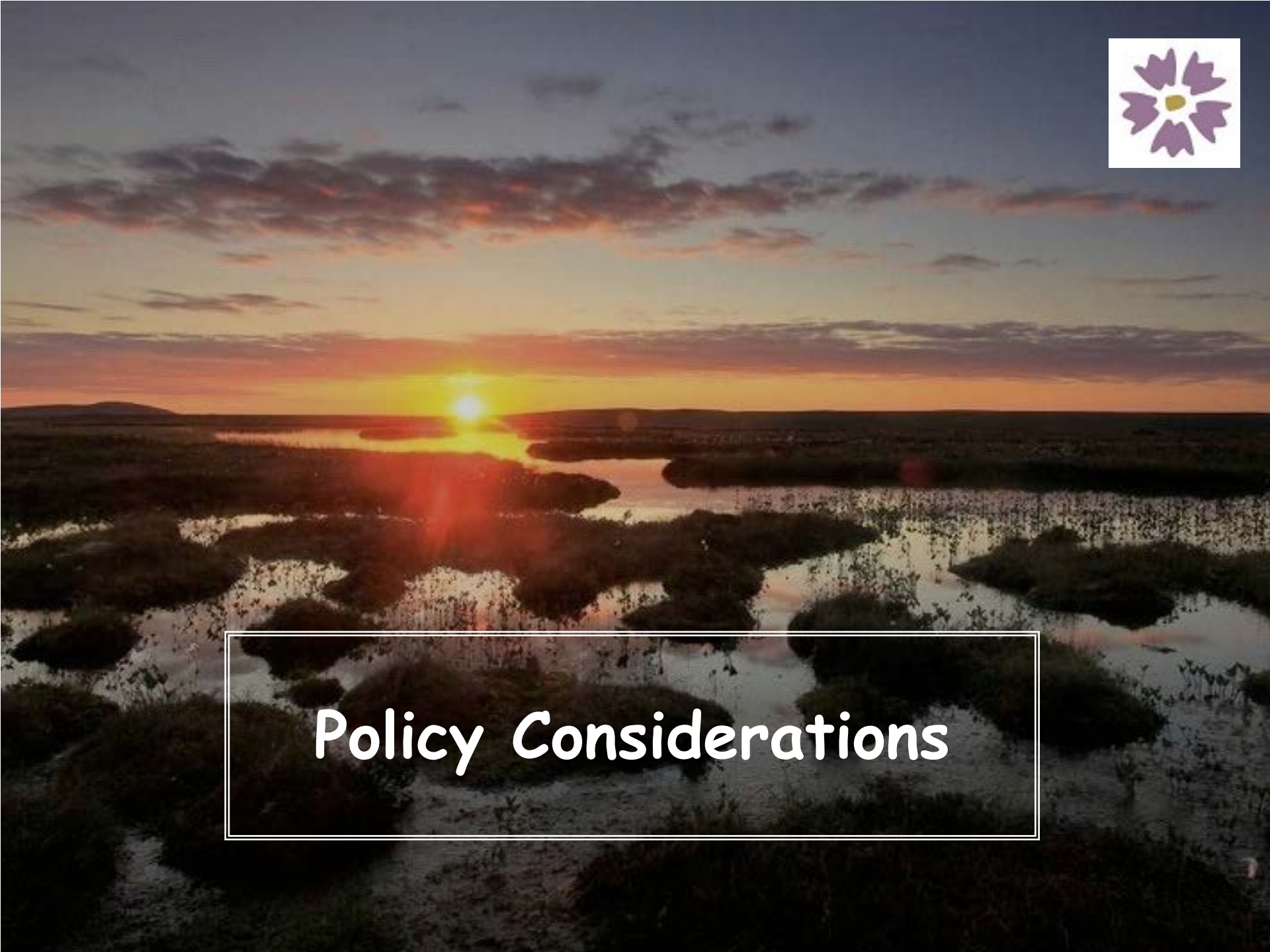
locked up carbon.
BeadaMoss can restore large areas of damaged peatland utilising cost effective aerial application.
The Solution
The Aim
BeadaMoss
Thriving on open moor
Re-established blanket bog
Following initial exposed peatland stabilisation and restoration, BeadaMoss returns living sphagnum back to moor.
Over time blanket bog is re-established, preventing further erosion of moor and bringing twofold carbon capture benefits.
ndent field trials of BeadaMoss were sponsored by The Co-operative
ation and were conducted by Dr Simon Caporn of Manchester Metropolitan
nity. See www.beadamoss.co.uk
The co-operative foundation
Working in partnership with Soil Horizons, Micropropagation Serv
have produced a range of robust moorland plants. Current spec
regular production include:
Cotton Grass
Bilberry
MFTFE10.2
COWBB
willow
Micropropagation S
East Leake, Lough
tel: 0800 015 35
www.Be
BeadaMoss
Sphagnum fallax
SFMGW
MicroPropagation Services
www.beadamoss.co.uk

Peatland restoration

"Looking after our peatbogs goes hand in hand with good game management and repairing damage enhances the environment we rely upon for our livelihoods."

Lindsay Waddell, Chairman National Gamekeepers Association


Recovery of water levels and key pea
forming vegetation


Policy Considerations

International Policy

- United Nations Framework Convention on Climate Change (UNFCC)
- "Protecting and enhancing greenhouse gas sinks and carbon stores and promoting practices that reduce emissions from agriculture and forestry"
- Kyoto Protocol Article 3.4 (from 2013)
- "*A Party included in Annex I may choose to account for anthropogenic greenhouse gas emissions by sources and removals by sinks resulting from any or all of the following activities: revegetation, cropland management, grazing land management, and wetland drainage and rewetting*"

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UK Policy
Securing Benefits from UK Peatlands

Clifton Bain
Director, IUCN UK Peatland Programme

5 February 2013

SECURING BENEFITS FROM UK PEATLANDS

We welcome the publication of the IUCN UK Peatland Programme Commission of Inquiry on Peatlands. The UK's peatland habitats are of importance for wildlife and biodiversity, landscape value and economic, including leisure, activities. The Commission of Inquiry has drawn public attention to the value of our peatlands.

Recognising the impact of past land use on the condition of our peatland ecosystems, this letter outlines the actions and intentions of Defra, the Scottish Government, the Welsh Government and the Northern Ireland Executive to achieve our collective aim of enhancing the natural capital of UK peatlands.

Policy co-ordination

The UK, together with the British Overseas Territories, supports internationally important peatland habitats and species including some of the finest examples of Atlantic blanket bog in the world. Conserving and restoring peatlands (blanket bogs, raised bogs and fens) makes an important contribution to the UK's biodiversity objectives. As one of our major wetland types, peatlands have a potentially significant role in contributing to water quality and quantity benefits. The importance of peatlands in terms of climate change mitigation through conserving the carbon stocks and enhancing sequestration makes a strong case for improving the condition of our peatlands.

We recognise the wide ranging importance of peatlands and the need for co-ordinated Government action across biodiversity, climate change, water, heritage and land use. Whilst acknowledging that further research is required, action can be and is being taken.

INVESTORS IN PEOPLE

Richard Benyon.

RICHARD BENYON Minister for Natural Environment and Fisheries, Defra

John Griffiths

JOHN GRIFFITHS Minister for Environment and Sustainable Development, Welsh Government

Alexander Attwood

ALEX ATTWOOD Minister for the Environment, Northern Ireland Executive

Paul Wheelhouse

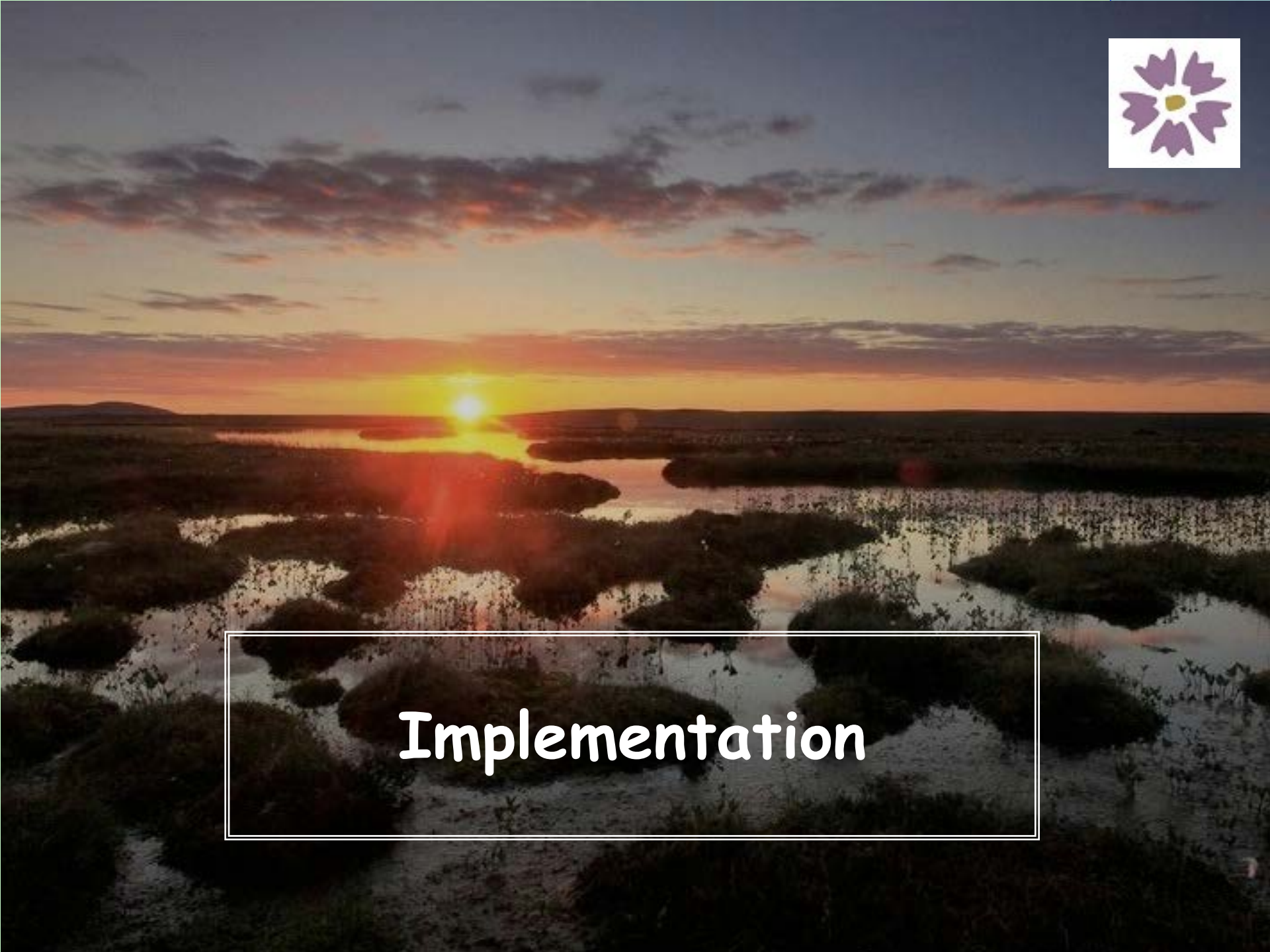
PAUL WHEELHOUSE Minister for Environment and Climate Change, Scottish Government

UK Policy
Securing Benefits from UK Peatlands - quotes

- This letter is a statement of intent to protect and enhance the natural capital provided by peatlands
- We hope this letter will provide a signal to encourage public bodies, the private sector and local partnerships to continue working together towards our shared goals
- Several research studies have shown the benefits of peatlands, including water quantity and quality regulation

UK Policy
Securing Benefits from UK Peatlands - quotes

- The importance of peatlands in terms of climate change mitigation through conserving the carbon stocks and enhancing sequestration makes a strong case for improving the condition of our peatlands
- There are clearly shared interests in ensuring that our peatlands are managed sustainably
- Funding of £1.7m is being made available to Scottish Natural Heritage over the 3 years 2012-15 to develop a Peatland Plan for Scotland and to support innovative projects


Implementation

Proposed Restoration Goal for UK

- Goal
  - to enhance and restore 1 million hectares of peatland
  - by 2020,
  - restore the peatland and secure the carbon in perpetuity
- Potential CO_2 saving
  - 2.5 million tonnes p.a.
- Funding
  - public funds
  - additional £250 million required
  - over the next ten years

Scotland: Green Stimulus Fund

- Funding from SG
  - announced in October 2012
  - £1.7m over 3yr period
- Allocation?
  - SNH responsibility
  - IUCN proposals
  - Demonstration sites
- Progress
  - Some expenditure to Mar 13
  - Project Officer
  - Steering Group

Sources of funding

- SRDP
- Other government funds
  - Green Stimulus
- Private Sector
  - Voluntary
    - Corporate Social Responsibility
  - Carbon Market
  - Peatland Carbon Code

Contentious Issues

- Impact of peatland restoration on other management
  - Grazing
  - Burning
  - Sporting
  - Scale
- Restrictions on SRDP
- Scottish Water
  - Water quality & quantity
- Downstream flooding - SEPA
- Re-wetting & heather beetle